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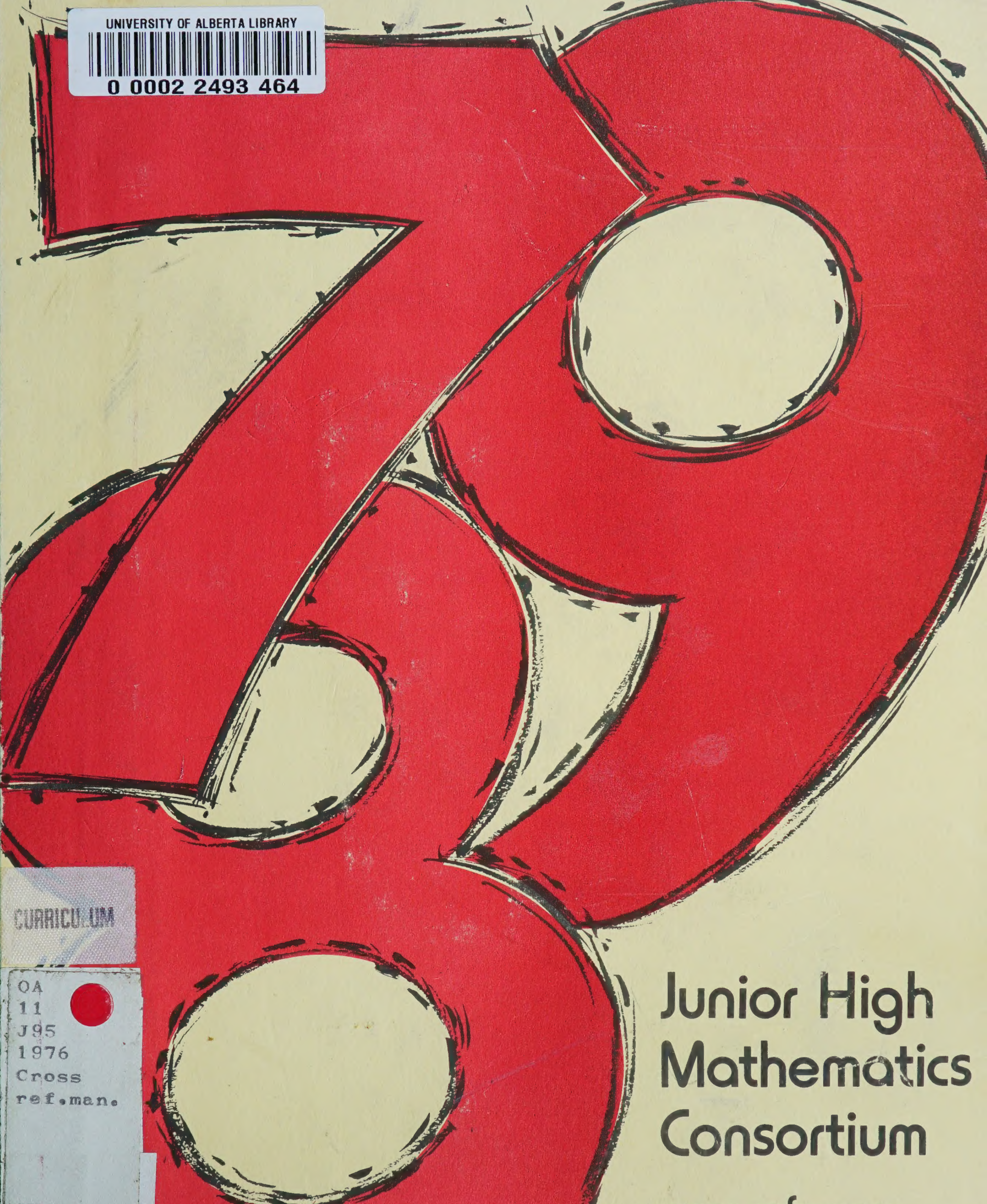

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JUNIOR HIGH MATHEMATICS CONSORTIUM

MATHEMATICS PROGRAM

This Junior High Mathematics Program has been prepared through the cooperative efforts of the twenty member systems in the Junior High Mathematics Consortium. All the components of the program are related to the performance objectives and provide the teacher with a variety of teaching strategies, activities and resources to facilitate the instructional process. The teachers have the opportunity to determine the modes of instruction that best suits them and their students.

For each objective within the program, there is a bank of test items. The items in the bank have been field tested to determine difficulty and reliability and validated by a committee of teachers and curricular coordinators.

The program was made possible through the assistance and co-operation of many individuals. Special thanks and acknowledgements are extended to:

The many teachers who helped design, develop pilot and revise the program materials;

The publishers for referencing their materials to the performance objectives: Addison-Wesley, Gage Publishing and Holt Rinehart;

The Department of Education, Province of Alberta for partially funding the project;

The administrators, supervisors, consultants and curricular associates from each of the cooperating systems for providing time, money and expertise to the program.

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ACKNOWLEDGEMENTS

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1. Edmonton Public School District #7
2. Edmonton Separate School District #7
3. County of Leduc #25
4. County of Parkland #31
5. St. Albert Protestant Separate School District #6
6. County of Strathcona #20
7. Calgary School District #19
8. Calgary Roman Catholic Separate School District #1
9. Foothills School Division #38
10. County of Vulcan #2
11. County of Ponoka #3
12. Red Deer School District #104
13. Red Deer Roman Catholic Separate School District #17
14. Mountain View County #17
15. Falher Consolidated School District #69
16. Fort McMurray Roman Catholic Separate School District #32
17. Bonnyville School Division #46
18. County of Beaver #9
19. County of St. Paul #19
20. St. Paul School District #2228

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JUNIOR HIGH MATHEMATICS PROGRAM

CROSS-REFERENCE MANUAL

LEVEL 7, 8, 9

INTRODUCTION

The Cross-Reference Manual provides teachers with an index of textual terial. These references assist in the location of developments and ated exercises for each of the program objectives contained in the ferenced texts. If no entry appears the teacher should refer to the arning package for the required material.

Each reference is coded I, M, or E to indicate the level of difficulty. e code is to be interpreted as follows:

I - Introductory Material

This code does not indicate that the exercise should be used to introduce a topic, but that the depth of coverage remains at the introductory level.

M - Maintenance or Average Material

All "M" coded exercises are basic core program material and the topics are treated in more depth than the introductory exercises.

E - Extension and Enrichment Materials

The references coded "E" indicate that the content goes beyond the basic core program.

It is not necessary to purchase class sets of all the texts referenced. e extent to which a text or a multi-text approach is used depends on the dividual teacher and the capability of the normal budget accounts to fund e acquisition of texts.

ABBREVIATIONS USED TO INDICATE RESOURCES

CM1	Contemporary Mathematics 1
CM2	Contemporary Mathematics 2
CM3	Contemporary Mathematics 3
MCA1	Mathematics Concepts Applications (First Course)
MCA2	Mathematics Concepts Applications (Second Course)
EA	Elementary Algebra
EMM1	Exploring Modern Mathematics 1
EMM2	Exploring Modern Mathematics 2
EMM3	Exploring Modern Mathematics 3
SWM1	Success with Mathematics 1
SWM2	Success with Mathematics 2
SWM3	Success with Mathematics 3

TEXT REFERENCES

LEVEL 7

[illegible]

[illegible] Mathematics [illegible]

[illegible] Mathematics [illegible]

[illegible]

[illegible] (First Course)

[illegible] (Second Course)

[illegible]

OBJECTIVE 1: Use symbols such as:

$\{\,\}$ - the set of

$\in$ - belongs to or is an element of

$|$ - such that

$\sim$ - is equivalent to

$\subset$ - is a subset of - when referring to sets.

Note: Teach Objectives 1 and 2 together. This unit is included so that students will have some useful terminology and symbols for work in more advanced concepts.

OBJECTIVE 2: Tabulate five sets from students everyday life. (Limit: 5 elements.)

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Define curly brackets & elements	CM1 p. 1	Read 1, Do Ex. 2 and 3	Teach Objectives 1 and 2 together
M	Description & tabulation	MCA1 p. 8	Do Block 1	

OBJECTIVE 3: Select the sets that contain only the elements from a given universe.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES

OBJECTIVE 4: List all subsets (include the empty set) for any given set. (Limit: 4 elements.)

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Definition of empty set	CM1 p.5	Read 1-2, Do Ex. 3	Some students have difficulty distinguishing between { } and the set that has zero as its only element. i.e. {0}.
I		MCA1 p.9	Read p. 9, Do D	
M	Sets and Subsets	MCA1 p.8-10	Read	
		p.10	Do Block 2	
E	Tabulate subsets	SWM2 p.16	Do "For You to Investigate", and 1 - 3	The number of subsets = 2^n where n is the number of elements in a set
		p.17	Do "On Your Own"	

OBJECTIVE 5: *Use Venn diagrams to represent a set and one of its subsets.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Diagram	MCA1 p.12	Read paragraph below Diagram 4.	The purpose here is to provide a foundation for those objectives requiring Venn diagrams to show the relationships between the various number systems, families of polygons,etc.

OBJECTIVE 6: Determine from a list of sets those sets which are equal (identical)

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Define equal (identical) sets	CM1 p.3	Read #1 and #2	Equal means identical with or congruent to. Take care with the language of sets.
M	Select equal (identical) sets	CM1 p.3	Do Exercise 3	Teach Objectives 6 & 7 together.

OBJECTIVE 7: * Determine from a list of sets those sets which are equivalent.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
				Two sets with the same number of elements are equivalent sets. See p. 1, 2, CM2.

OBJECTIVE 8: Determine if a set is finite or infinite.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Define	CM1 p. 4	Read #1 & #2	Discuss sets that are finite but difficult (not practical) to tabulate.
I	Select the infinite sets	CM1 p. 4	Do Ex. 3	

OBJECTIVE 1: Compare the set of whole numbers and the set of natural numbers by plotting both sets on a number line.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Introduction to the no. line & plotting of the wholes.	CM1 p.12-14	Read and do 1-11	One possible method.
I,M	Graphs of finite & infinite sets of whole numbers	MCA1 p.14	Read Development Do Blocks 1, 2	In the text "whole numbers", 0,1,2,..., are called "natural numbers" and 1,2,3,..., is called the set of counting numbers.
I,M	Practice reading & making whole no. graphs	p.31	Do Blocks 1,2	
M	Duplicating masters		#77 - 82	

OBJECTIVE 2: Demonstrate need for whole numbers. (eg. closure property).

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Closure property	CM1 p.30	Do Ex. #1	Students always want to know why. By showing them that 7-7 is impossible by using natural numbers it indicates that a zero is needed. This leads to a discussion of the closure property. A point that can also be brought out is that zero can now be used for x + 7 = 7 (ie. identity element). It is not necessary to call it the identity element for addition at this point.
I	Builds idea of closure	p.30-31	Read 2-7	
I	Closure for Multiplication	p.32	Do Ex. 9-10	
I	Closure for subtraction & division	p.32	Read 11-12	
M	Closure for addition for multiplication	p.33	Do Ex. #13	

OBJECTIVE 3: Write any whole number in expanded form.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I		CM1 p.9-10	Read 1-4	Depending on the ability of your class, you may wish to introduce exponents to shorten the expanded form. This objective comes in Unit six, "Exponents".
I	Write expanded numerals		Do Ex. #5	
M	Practice	p.34	Do Ex.7,9,10	
M	Practice	p.357	Do Ex. #4	
I,M	Base ten numeration and expanded form, writing expanded form using exponents	MCA1 p. 104-6	Read Development	
		p.106	Do Block 1	
M	Practice with place value up to hundred millions	p.106	Do Blocks 2 & 3	
I	Decimal system using money	SWM1 p. 32	Do "For You to Investigate" and #1,2,3	
		p.33	Do "On Your Own" #1, 2	
I	Place values	p.34	Do "For You to Study" and #1,2,3	
		p.35	Do #1,2,3,4	
I	Concept of the number 100	SWM1 p.36	Do "For You to Investigate" & #1,2	
		p.37	Do Project Card #17	

OBJECTIVE 3: (Cont'd)

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Concept of the number 1000	p.38	Do "For You to Discover" and #1, 2	
		p. 39	Do # 1, 2, 3	
		p. 50	Do # 1, 2	
I	Practice	p.48	Do "An Activity for You" and #1, 2	
		p.49	Do #1,2,3,4, and Project Card #21	

OBJECTIVE 4: Write any whole number in standard form given the expanded form.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Practice	CM1 p.10	Do Exercises 6, 7	
M	Practice	p.34	Do Exercise 8	
M	Practice	p.357	Do Exercise 5	
I	Counting & Place value	SWM1 p.40	Do "For You to Study" and #1, 2, 3	
		p.41	Do #1,2,3	
		p.42	Do #1,2,	
		p.43	Do #1,2	
I	Game	p.45	Play the game with a classmate.	
I	Practice	p.46	Do "An Activity for You" and #1,2,3,4	
		p.47	Do #1,2,3	
		p.47	Do Project Card #20	
I	Additional experiences	p.48-55	Many exercises	

OBJECTIVE 5: Perform the operations of addition and subtraction with whole numbers using the following terminology: addends, sum, difference, subtrahend, minuend.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Addition & subtraction by using the number line.	CM1 p.15	Read 13-16	Ability of class determines the depth that you should go to with this objective. Most students should already have mastery of addition & subtraction. The terminology helps build vocabulary that will pay off for them in problem solving. Subtrahend is an important concept when they get to Grade 8 and have to add the opposite for subtraction.
I	Practice	p.16	Do Exercise 17	
I	Addition by sets	p.18-19	Read #1	
I	Subtraction by related addition	p.24	Read #1,2	
I	Practice	p.25	Do Exercises 3,4	
M	Practice	p.35	Do Exercise 11	
		p.358	Do Exercises 3-1	
I	Finding sums	SWM1 p.60	Do "For You to Investigate" & #1,2,3,4	
		p.61	Do #1,2,3	
			Do Project Card #26	
I	Practice	p.334	Do Sets 1 and 2	
		p.62	Do "For You to Investigate" & #1 to 4	
		p.63	Do #1,2,3 and Project Card #27	
I	Practice	p.335	Do Sets 3 and 4	
I	Missing addends	p.64	Do "For you to Investigate" and #1 to 4	
		p.65	Do #1,2,3 and Project Card #28	

OBJECTIVE 5: Cont'd

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Practice addition and subtraction nomograph	SWM1 p.336	Do Sets 5 and 6	
		p.66	Do "For You to Investigate" and #1 to 5	
		p.67	Do #1 and 2	
I	Practice	p.68	Do #1,2,3 and Project Card #30	
I	Practice	p.337	Do Sets 7 and 8	
I	Game	p.71	Play the "15" game with a classmate.	
	IRO Computer	p.72	Do "For You to Discover" and #1 and 2	
	Practice	p.73	Do #1 to 6, and Project Card #21	
	Practice	p.76	Do "For You to Discover" and #1 and 2	
		p.77	Do #1 to 5	
			Do Project Card # 32	
	Practice	p.338	Do Sets 9 & 10	
		p.78	Do #1 to 4	
	Review	p. 80	Do 1,2,3 & 4	
	Review	p.81	Do 2 and 3	

OBJECTIVE 5: Cont'd

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Adding two digit numbers	SWM1 p.88	Do "For You to Study" and #1,2	
	Practice	p.89	Do #1,2,3 and Project Card #34	
	Practice	p.339-41	Do Sets 11 - 15	
I	Subtracting	p.94	Do "For You to Investigate" and #1 to 4	
		p.95	Do #1 to 5	
	Practice	p.342	Do Set 16	
	Review	p.102	Do #1 to 6	
		p.103	Do #2	
	Review	p.129	Do #4	
	Review	p.147	Do Mini check #2	
M	Duplicating Masters		#12, 13, 14, 16 18, 19, 64-69	

OBJECTIVE 6: Perform the operations of multiplication and division with whole numbers, using the following terminology: multiplicand, multiplier, product, divisor, dividend, quotient.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Multiplication using the number line	CM1 p.16	Do Ex. 20, 21	Students will require quite a bit of practice with division. The shortened method is the traditional method and should be stressed over the subtractive method.
I	Multiplying	p.21,22	Read 1-3	
I	Division by changing to multiplication	p.26-27	Read 1 - 3	
I	Practice	p.27	Do Ex. 4,5	
M	Division by the shortened method	p.79	Do Ex. 6	Accuracy and speed in these operations is dependent upon the student really knowing the "times" tables through to 12 x 12
I	Short Division	p.79	Read #7	
I	Explanation of steps for short division	p. 80	Do Ex. #8	
M	Short division practice	p.80	Do Ex. 9	
M	Division Practice	p.359	Do Ex. 4	
I,M	Review of whole number multiplication	MCA1 p.412-3	Read development	"Multiplier" and "Multiplicand" not used.
		p.413	Do Blocks 1, 2	
I,M	Use of properites in multiplication computation	p.62	Do Block 1	
I,M	Practice with multiplication	p.62	Do Block 2	

OBJECTIVE 6: Cont'd

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I,M	Review of Greenwood division method	MCA1 p.414-7 p.417	Read development Do Ex. A-R	"Quotient" only term used
I,M	Comparison of Greenwood and traditional division computation	p.418-20 p.420	Read development Do Exercises A-R	By now, traditional procedure is the preferred method.
I,M	Practice with division	p.422	Do Block 1	
I	Introduces multiplication	SWM1 p.132	Do "For You to Investigate" and #1,2	
	Practice	p.133	Do "On Your Own" and #1,2,3	
	Finding products	p.134	Do "For You to Investigate" and #1,2,3	
	Practice	p.135 p.137 p.142	Do #1,2 Do Project Card #49 Do "On Your Own" #1 - 4	
	Multiplying	p.144	Do "For You to Investigate" and #1,2,3	
	Practice	p.145	Do "On Your Own #1,2	
	Practice	p.145	Do Project Card #50	

OBJECTIVE 6: Cont'd

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Practice	SWM1 p.345	Do Set 23	
I	IRO Computer	p.150	Do "For You to Investigate" and #1,2	
		p.151	Do "On Your Own" #1 to 10	
I	Multiplying by 10, 100, 1000	p.158	Do "For You to Discover" and #1,2,3	
	Practice	p.159	Do "On Your Own" #1 - 5	
			Do Project Card #53	
I	Shortcuts in multiplication	p.162	Do "For You to Discover" and #1,2,3	
		p.163	Do "On Your Own" #1 - 4	
I	Practice	p.347	Do Set 26	
I	Game	p.169	Play game	
	Multiplying by one digit	p.172	Do "For You to Study" and #1 - 3	
		p.173	Do "On Your Own" #1,2	
	Practice	p.347	Do Set 27	
I	Multiplying numbers	p.174	Do "For you to Study" #1,2	

OBJECTIVE 6: Cont'd

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Multiplying numbers	SWM1 p.175	Do "On Your Own" #1,2,3	
I	Review	p.181	Do "Checking Up" #1 - 5	Review Objectives 5 and 6
I	Division	p.184	Do "For You to Investigate" and #1 - 4	
		p.185	Do "On Your Own" # 1 - 5	
I	Division	p.186	Do "For You to Discover" and #1 - 4	
		p. 187	Do "On Your Own" # 1 - 3	
	Division & Multiplication	p.188	Do "For You to Discover" and # 1 - 4	
		p.189	Do "On Your Own" #1 - 3, & Project Card #62	
	Practice	p.349	Do Set 32	
I	Multiplication and division with IRO computer	p.190	Do "For You to Investigate" and #1 ,2	
		p.191	Do "On Your Own" #1 - 4	
I	Practice	p.350	Do Set 33	
I	Practice	p.197	Do "On Your Own" # 1 - 3	

OBJECTIVE 6: Cont'd

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Practice	p.350	Do Set 34	
I	Finding quotients	p.198	Do "For You to Investigate" and #1,2	
		p.199	Do "On Your Own" #1, 2	
I	Practice	p.351	Do Set 35	
I	Finding quotients & remainders	p.200	Do "What are Your Ideas" #1 - 5	
		p.201	Do "On Your Own" #4, and Project Card #64	
	Practice	p.351	Do Set 36	
I	Review	p.212	Do # 1 - 7	
I	Practice	p.353-4	Do Sets 41 & 42	
M	Duplicating Masters		#27, 29, 30, 33, 35, 37, 38, 40, 41, 70-77, 82-85.	

OBJECTIVE 8: Demonstrate the use of identity elements and the zero property. (De-emphasize terminology.)

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Identity for addition	CM1 p.27	Do Exercise 1	$1 \times n = n$ and $n \times 1 = n$ should be stressed as students have difficulty with this concept in algebra. The identity element for addition is used over and over in the fraction unit. ie. generation of equivalent fractions and reducing fractions.
I	Definition of the identity element for addition	p.27	Read #2	
I	Multiplication by zero	p.27	Do Exercise 3	
I	Zero properties	p.28	Read #4 - 7	
I	Identity for multiplication	p.29	Do Exercise 1	
I	Definition of the identity element for multiplication	p.29	Read #2,3	
I,M	Meaning of whole no. properties including identity and zero properties	MCA1 p.32-33	Read development	$\{0,1,2...\}$ called natural nos. in this text.
I,M	Meaning of "property" Use of commutative property for shortcuts	p.33	Do Block 1& 2	
I	Identity and zero properties	SWM1 p.136	Do"For You to Investigate" and #1,2,3	
		p .137	Do "On Your Own" #1,2,3	
		p.344	Do Set 21 - A	
M	Duplicating Masters		#28	

OBJECTIVE 9: Demonstrate that division by zero is undefined.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENT	TEACHER NOTES
I	Explanation by using the related multiplication sentence	CM1 p.28	Read 8 - 10	This is a difficult concept for most students and should be brought up time and time again during the school term. The limit approach may be used to reinforce the related number sentence method. However, it tends to be confusing to many students at this level.

OBJECTIVE 10: Evaluate an expression by using the properties to produce shortcuts in computation. (De-emphasize terminology.)
eg. 4 x 23 x 25 = n
100 x 23 = n

CODE	ITEM	RESOURCE	DIRECTION TO STUDENT	TEACHER NOTES
I	Commutative of addition	CM1 p.19	Read #2	Stress the shortcuts that the properties produce. This gives the student a reason for learning them. eg. 1) 7 + 5 + 3 + 5 can be added if you look for tens. 2) 22 x 749 is easier if done 749 x 22
I	Associative of addition	p.20	Read #3,4	
I	Practice with associative of addition	p.21	Do Exercise 5	
I	Commutative of multipl.	p.22	Read #2,3 Do Exercise 4	
I	Associative of multipl.	p.23	Read #5, 6 Do Exercise 7	
M	Using associative & commutative for finding an unknown answer	p.33-34	Do Exercises 3-5	

OBJECTIVE 10: Cont'd.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Commutative of addition	p.67	Do Exercise 4	3) 35 x 52 = 35 x 50 + 35 x 2 ____
I	Using commutative for addition to make shortcuts	p.67	Read #5	
M	Practice with shortcuts	p.68	Do Exercise 6	Students should be forced to verbalize the definitions for the 3 properties.
I	Commutative for multipl.	p.69	Read #8	
M	Practice shortcuts	p.69	Do Exercise 9	One method to get students to use the shortcuts is to give them time tests.
M	Splitting of numbers to produce shortcuts for addition	p.71	Read #12	
M	Practice	CM1 p.71	Do Exercise 13	
I	Splitting of numbers to produce shortcuts for multipl.	p.72	Read #14-16	
M	Practice	p.72	Do Ex. 15, 17	
I	Distributive by discovery	p.73	Do Ex. 18	The distributive property is the most frequently used property. It has many applications in rapid computation and algebra.
I	Introduction to the distributive property	p.73,74	Read #19,20	
I	Multipl. 3 different ways	p.74-75	Do Ex. 21,22,24	
M	Practice multiplication	p.77	Do Exercise 2	

OBJECTIVE 10: Cont'd

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Grouping for multiplication	SWM1 p.138	Do "For You to Investigate" and #1,2	
		p.139	Do "On Your Own" #1 - 9	
	Practice	p.345	Do Set 22	
		p.140	Do "For You to Study" and #1 - 4	
		p.141	Do "On Your Own" #1,2,3	
	Commutative property	p.160	Do "For You to Investigate" & #1 - 5	
		p.161	Do " On Your Own" #1 - 5	
I	Associative property	SWM1 p.166	Do " For You to Study" and # 1 - 3	
		p.167	Do "On Your Own" #1 - 15	

OBJECTIVE 11: Evaluate expressions involving the order of operations. (Limit: expressions of the type 7 + 5 - 4 - 3 x 1 =).

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Brackets	CM1 p.8-9	Read #1 - 5 Do Exercise 6	Students require a fair amount of work with this idea. Perhaps "Bob Made Donuts After School", BMDAS. Where B means brackets, M,D,A,S are the operations. Remember that M & D, A & S, are done as they come. Working the order of operations with operations in both the numerator and denominator is not necessary.
I	Development of the rules	p.37-38	Read # 1 - 3	
M	Practice	p.38	Do Ex. 1,2	
E	Denominators	p.39	Do Ex. 3,4	
M	Practice	p.40	Do Ex. 6, (a - i)	
M	Practice	p.357	Do Exercise 3	
I,M	Order of operations in evaluating numerical expressions	MCA1 p.16-17	Read development	
		p.17	Do Blocks 1, 3	
I,M		MCA1 p.41	Do Block 2	
		p.49	Test 26	

OBJECTIVE 7: Use symbols and notation illustrated below in evaluating expressions and solving conditions:

a) Multiplication : (i) $3 \times 4 = (3)(4) = 3(4)$

(ii) $3x = (3)(x) = 3(x)$

b) Division: (i) $\frac{9}{3} = 9 \div 3 = 3\overline{)\,9}$

(ii) $\frac{9}{x} = 9 \div x = x\overline{)\,9}$

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
				For many this is the first time that they have been exposed to brackets for multiplication and the use of a fraction for division.

OBJECTIVE 12: Evaluate expressions by substituting for the variable. (Limit: whole numbers and one variable.)

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Open number sentences	CM1 p.41 p.41	Read 102 Do exercise 3 a-z	
I	Using a letter in open sentence	p.61	Read 1 Do Exercise 2 (a,b,c,f,h,i,j,m,n, o,p,r,t)	
M	Use replacement values given then compute	MCA1 p.17	Do Block 2	
M	Solution equations by substitution	p.26	Do Block 2	
	Use of properties	p.32-35	Read Development	
		p.33	Do Blocks 1 & 2	
		p.35	Do Ex. A - L	

OBJECTIVE 13: Solve conditions for equality using an informal approach for the following types. (Limit: whole numbers).

(a) $A + x = B$ (c) $Ax + B = C$

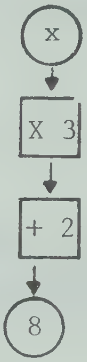
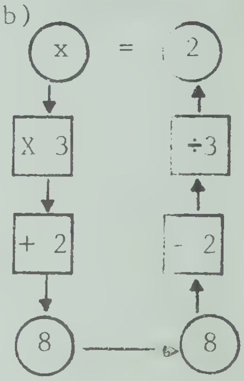
(b) $Ax = B$ (d) $Ax + Bx = C$

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Whole nos. in open sentences	CM2 p.46	Read 1, 2 & 4	Let the students have a chance to discover their own methods for solving these conditions. This should give them a better feel for the formalized approach to come later. One method to try might be: $3x + 2 = 8$ Cover 3x with finger. What must be under my finger to make sentence true? 6! $\therefore 3x = 6$ Cover x with finger. What must be under my finger? 2! $\therefore x = 2$
		p.47	Do Ex. 5 a - t	
		p.62	Do Ex. 3 a,b,c,d, h,q,r	
I,M	Solve conditions by trial substitution	MCA1 p.23-25	Read the development	
		p.26	Do Block 2	
I,M	Practice	p.34	Study	
		p.35	Do Ex. A - L	
		p.36	Study	
		p.37	Do Blocks 1 & 2	
		p.38	Study	
		p.39	Do Blocks 1 & 2	

OBJECTIVE 14: Verify solutions of conditions by substitution.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
				Students should practice the substitution procedure of checking the solution.

OBJECTIVE 15: Use some formalized approach to solving conditions, (eg. flow charts, related number sentences).

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Related number sentences	CM1 p.35	Do Ex. 12	FLOW CHARTS: $3x + 2 = 8$ (a)  Write condition in this form (b)  Reverse direction and do opposite operations. Consider equation only.
M	Related number sentences	p.358	Do Ex. 3, 1-2	
I	Writing logical statements	SWM1 p.84	Do "For You to Investigate" and #1 to 4	
		p.85	Do #1 to 7	
		p.86	Do "For You to Investigate" and #1,2	
		p.87	Do #1 to 4	

OBJECTIVE 16: Write English sentences for mathematical sentences.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
				eg. $3x + 2 = 8$ becomes three times a number plus two equals six. You can also have some fun if you ask students to make up problems for the condition rather than just writing the English for it.

OBJECTIVE 17: Write mathematical sentences for English sentences.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Write open sentences	CM1 p.54	Read 8	
		p.55	Do 9 a - j	
I	Problems	SWM1 p.74	Do "For You to Investigate" and #1,2,3	
		p.75	Do #1,2	
I	Problems	p.79	Do 1-8	
			Do Project Card #33	
		p.80	Do 6 a-e	
		p.103	Do 4 a-d	
		p.164	Do "On Your Own" #1 - 8	
I	Distance-rate problems	p.165	Do Project Card	

OBJECTIVE 18: Solve the following types of problems using any organized approach.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Practice whole numbers	CM1 p.48	Read 1 Do Ex. 2 (a,b,e,f,j,l)	
I	Setting up problems.	p.58-59	Read 1,2	
M	Practice	p.59	Do Ex. 3	
I	Addition & subtraction sentences for problems	MCA1 p.426-428 p.428	Read development Do problems A - O	Reviews Gr. 6 approach
I	Multiplication & division sentences for problems	MCA1 p.429-430 p.430-431	Read development Do prob. A -G	Reviews Gr. 6 approach
I	Writing & solving addition & subtraction type on a comparison basis(more than -less than)	MCA1 p.432-434 p.433-434	Read development Do problems A - N	
I	Word problems	p.25-26	Do Block 1 A - J	Uses tables of ordered pairs. Multiple choice type problem.
I	Word problems	p.42	Do A - I	
I	Comparison type prob.	p.136	Applying Math 7 Do A - E	
I	Practice with all of the above	p.435	Do Checking up.	

ECTIVE 18: Continued

DE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
	Addition & subtraction sentences for problems, solving by related sentences.	MCA1 p.426 p.428	Read development Do problems A - O	Reteaching of Grade 6 approach.
	Multiplication & division sentences for problems, solving by related sentences.	p.429 - 430 p.430 - 431	Read development Do problems A - G	Reteaching of Grade 6 approach.
	Writing & solving addition and subtraction sentences for comparison problems (more than, less than).	p.432 - 434 p.433 - 434	Read development Do problems A - N	Reteaching of Grade 6 approach.
	Practice with comparison problem	p.136	Do "Applying Mathematics"	
	Practice with all above	p.423	Do "Applying Mathematics"	
	Making function tables and graphs for problems	p.18- p.21-22	Read development Do Blocks 1 - 4	
	Making tables for problems involving more complicated function rules	p.22	Do Expertise	
	Practice making function tables	MCA1 Overhead visuals; Unit C	Discuss Activity I with teacher	
	Practice with above	MCA1 p.33	Do Exercises	
	Solving a problem with a more complicated rule	MCA1 Overhead visuals; Unit C	Discuss Activity 2 with teacher.	

OBJECTIVE 18: Cont'd

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I,M	Solving problems by making function tables using table to solve equation	p.23-25 p.25-26	Read development Do Block 1	
I,M	Practice with above	p.34	Do Block 1	
I,M	Solving problems by making function table, using table to solve inequality	p.27-29 p.28-29	Read development Do Block 1	
I,M	Practice with above	p.35	Do Blocks 1,2	
I	Practice	p.170	Do "On Your Own" #1 to 9	
I	Problems	p.176	Do "For You to Investigate" and #1 - 4	
		p.177	Do "On Your Own" & Project Card #60	
I		p.178	Do " For You to Investigate" and #1 - 4	
		p.179	Do "On Your Own" #1 - 4 & Project Card #61.	
I	Review	p.180	Do #1 - 6	Reviews objectives 6 and 21.
I	Problems involving division	p.192	Do "For You to Investigate" and #1 - 3	
		p.193	Do "On Your Own" # 1-10	

OBJECTIVE 18: Cont'd

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Problems involving division	SWM1 p.199	Do "On Your Own #3	
		p.201	Do "On Your Own" #1 - 3	
I	Problems involving division	SWM1 p.202	Do "On Your Own" #1 - 3	
		p.203	Do "On Your Own" #1 - 4	
I	Finding averages	p.204	Do "For You to Investigate" and #1 - 3	
		p.205	Do "On Your Own" #1,2 and Project Card #65.	
I	Problems involving time	p.206	Do "For You to Discover" and #1 - 4	
		p.207	Do "On Your Own" #1 - 3	
I	Time, rate, distance problems	p.208	Do "For You to Investigate" and #1 - 3	
		p.209	Do "On Your Own' #1,2	
I	Review	SWM1 p.213	Do #8,9	
I	Review	p.214-215	Do "Checking Up" #1 to 11	Exercises review objectives 3,5, 6,11,21.
M	Review	p.264-265	Do #1 to 11	Exercises review objectives 3,4,5, 6,11 and 21

OBJECTIVE A1 - Maintain all previously developed skills and ideas: primes, composites, factors, multiples & divisibility.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Factors and multiples	CM 1 p.83	Read 1 Do Exercise 2(a-l)	
M	Primes	p.84 p.85	Read 1 Do Exercise 2(a - f)	
M	Composite	p.85	Read 3 Do Exercise 4 a - c	
M	Divisibility	p.88 p.89	Read 1-2 Do Exercise 3 (a,b,c,d)	
M	Review factor, listing set of factors, composite, prime, divisibility	MCA 1 p.44-45 p.45	Read development Do Blocks 1 & 2	{1,2,3...} is called the set of counting numbers. Introduce the word "multiple" in connection with prime sieve.

OBJECTIVE A2: List the set of factors for whole numbers (Limit: 100)

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Factors	CM 1 p.84	Read 3 Do Exercise 4(a - l)	

OBJECTIVE A3: Write the prime factorization for whole numbers. (Limit: 100)

ODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Prime factors	CM 1 p.85 p.86	Read 5 Do Ex. 6 (a,c,d) 7(b - j)	Factors means prime factors
E	Uniqueness of the prime factors	p.87	Read 1 Do Ex. 2(a,b)	
M	Using prime factors to obtain the complete set of factors	p.91	Read 6 Do Ex. 7 (b,c,e,f,g, n,u,v)	
M	Prime factors of whole numbers	p.364	Do Ex. 11 2(a-f)	
,M	Prime factorization, Exponential notation(base, power, exponent)	MCA 1 p.46-48 p.48	Read development Do Blocks 1,2,3 (a - i)	

BJECTIVE A4: *Obtain the G.C.F. for a set of four whole numbers. (Limit: 100)

ODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Definition of common factors	CM 1 p.93 p.94	Read 1, 3 Do Ex. 2(a - p) Do Ex. 4(a - i)	Greatest common divisor is another name for G.C.F.
I	Definition of G.C.F.	p.94	Read 1	
M	Finding G.C.F.	p.95	Do Ex. 2 (a - 1)	
M	Finding G.C.F.	p.106	Do Ex. 8(a - c)	
M	Finding G.C.F.	p.365	Do Ex. 12, #1 a,b, #2 a,c,g #3(a - 1)	

OBJECTIVE A5: *Obtain the L.C.M. for a set of four whole numbers. (Limit: 100)

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Definition of common multiples	CM 1 p.95-96 p.96	Read 1 - 2 Do Ex. 3	If you use a set of four numbers, be selective.
I	Definition of L.C.M.	p.97	Read 1	
I	Finding L.C.M.	p.97	Do Ex. 2	
I	L.C.M. by prime factorization	p.97	Read 3 - 4	
I	Using prime factorization	p.98	Do Ex. 5 (b - v)	
M	L.C.M. of 3 numbers	p.99	Read 7 Do Ex. 8 (a - n)	
M	Finding L.C.M.	p.106	Do Ex. 9(a - f)	
M	Finding L.C.M	p.366	Do Ex. 4 - 5	
I,M	Finding G.C.F. & L.C.M. for 2 numbers, for 3 numbers	MCA 1 p.49-51 p.51	Read development Do Blocks 1 & 2	

OBJECTIVE A6: Determine if a pair of whole numbers is relatively prime (eg. prime factorization) (Limit: 100)

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Determining which pairs of numbers are relatively prime.	CM 1 p.95	Read 1 Do Ex. 2 (a,b,c,d,e,g,h,j,o)	

OBJECTIVE B1: Maintain previously developed skills and ideas: numerators, denominators, basic fraction, equivalent fractions, mixed numerals, improper fraction, and the order of fractions.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Meaning of fraction, numerator, denominator, basic fraction, equivalent fractions.	MCA 1 p.455-458 p.458	Read development Do Blocks 1 - 3	
I	Least common denominator	p.459-p. 460	Read development Do Ex. A-R	
I	Rational number line and ordering rationals	p.461-p.464	Read development Do Blocks 1 - 4	
I	Mixed numerals as sums, improper fractions	p.472-473 p.473	Read development Do Blocks 1 & 2	Explanation of mixed numerals is based on addition: $3\frac{1}{4}=\frac{12}{4}+\frac{1}{4}=\frac{13}{4}$ $\frac{22}{6}=\frac{18}{6}+\frac{4}{6}=3\frac{2}{3}$ Term "Improper Fraction" is not used.
I,M	Equivalent fractions, basic fractions, ordering fractions (comparison using $>$, $<$, $=$) By using cross-products	p.120-123 p.123	Read development Do Blocks 1 - 3	

OBJECTIVE B1: Cont'd

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Improper and mixed fractions.	SWM 1 p.230	Do: "For You to Discover" and #1 - 3	
I	Practice	p.231	Do: "On Your Own" #1 - 3	
I	Practice	p.232	Do: "For You to Discover" and #1 - 3	
I	Practice	p.233	Do: "On Your Own" #1 - 4	
I	Practice	p.355	Do: Set 45 and 46	

OBJECTIVE B2: Demonstrate the need for fractional numbers (eg. solve condition of the type 3x = 8)

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES

OBJECTIVE B3: Recognize fractional numerals of the form $\frac{a}{b}$ as:
a. part of a whole
b. part of a group
c. a measure
d. a ratio
e. division

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Meaning of fractions.	CM 1 p.127	Read 1 - 2	It is of particular importance that the student recognizes that a fraction can be thought of as a division question. This is needed for converting fractions to decimals.
I	Understanding fractions	SWM 1 p.218	Do: "For You to Investigate" Do: "What are Your Ideas?"	
	Practice	p.219	Do: "On Your Own" #1 - 4	
M	Investigation	p.229	Do: Project Card #72	

BJECTIVE B4: *Demonstrate that the whole numbers are a subset of the fractional numbers using Venn diagrams.

ODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES

OBJECTIVE B5: Demonstrate knowledge of the fractional numbers by plotting a given set on a number line.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Examples of plotting sets of fractions	CM 1 p.166	Read 1 - 2	
M	Practice	p.167	Do Ex. 3 - 4	
		p.174	Do Ex. 4	
I	Placing fractions on a number line	SWM 1 p.235	Do Project Card #76	

OBJECTIVE B6: Demonstrate the use of identity elements and zero property. (De-emphasize terminology.)

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	The identity element for addition	MCA 1 p.133-134 p.134	Read the development Do Block 3 (C,D,H)	Other addition properties are described in this lesson also.
M	The identity element for multiplication, the zero property	p.150-151 p.151	Read development Do Block 1 (C,F,G) Do Block 2 (C,E,H,I)	Other multiplication properties are described in this lesson.

BJECTIVE B7: Generate sets of equivalent fractions. (Limit: 5)

DE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Generation by the identity element	CM 1 p.135	Read 1 - 4	Use the identity element for multiplication
I	Generating fractions	p.136	Do Ex. 5,6,8	eg. $\frac{3}{4} = \frac{3}{4} \times \frac{2}{2} = \frac{6}{8}$
M	Practice	p.173	Do Ex. 1	
M	Finding the missing component of a fraction	p.174	Do Ex. 2	
		p.366-367	Do Ex. 1 - 2	
M	Generating one fraction	p.367	Do Ex. 3	
I	Equivalent fractions	SWM 1 p.220	Do: "For You to Investigate" Do: "What are Your Ideas?" #1,2	
		p.221	Do: " On Your Own" and Project Card #69	
I	Equivalent fractions	p.222	Do: "For You to Discover" and 1,2,3 (bottom)	
		p.223	Do: "On Your Own" #1,2,3 and Project Card #70	

OBJECTIVE B8: *Find the L.C.D. (e.g. using L.C.M.)

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Explanation using LCM	CM1 p.140-141	Read 1 - 2 Do Exercise 3	

OBJECTIVE B9: Reduce any fraction to its basic form. (e.g. using G.C.F.)

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Reduction by identifying fraction equal to one	CM1 p.136 137	Read 1 - 5	Students quite often think that $\frac{3}{12} = 4$, because they cross of 3 and write 4 for th the 12. They forget the factor 1 in the numerator.
I	Reducing fractions	p.137	Do Ex. 6 - 7	
M	Reducing improper fractions	p.139	Do Ex. 7 - 8	
M	Reducing fractions	p.174	Do Ex. 3, 5	
M	Practice	p.367	Do Ex. 4	
I	Reducing to lowest terms	SWM1 p.224	Do "For You to Discover" and #1 - 4 (bottom)	
	Practice	p.225	Do "On Your Own" #1 - 3	
	Practice	p.335	Do Set 44	

BJECTIVE B10: Perform the operations of addition and subtraction with fractional numbers. (Limit: 1 digit denominators).

ODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Same denominators	CM 1 p.154	Do Ex. 1 - 4	
I	Different denominators	p.154	Read 5 - 7 Do Ex. 8	
I	Addition of mixed fractions	p.156	Read 14 & 16 Do Ex. 15, 17	
I	Subtraction, same denominators	p.160	Read 1 Do Ex. 2	
M	Addition	p.174	Do Ex. 7	
M	Subtraction	p.174	Do Ex. 8	
M	Addition of 3 fractions with the same denominators.	p.367	Do Ex. 14(1)	
M	Different denominators, two fractions	p.367	Do Ex. 14(2)	
M	Different denominators, three fractions	p.368	Do Ex. 14(3 - 5)	
M	Subtraction of mixed fractions	p.368	Do Ex. 15(1,4)	
M	Using related additon sentences	p.368 p.369	Do Ex. 15(2, 3) Do Ex. 15(5)	
I	Addition and subtraction using fractions	SWM 1 p.242	Do: "For You to Discover" and #1 ,2 (bottom)	
I	Practice	p.243	Do: "On Your Own" #1 - 4	

OBJECTIVE B10: Cont'd

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Practice	p.356	Do: Sets 47,48	
I	Practice	p.244	Do: "For You to Investigate" Exercise and "What are your Ideas?" exercises.	
I	Practice	p.245 & 247	Do: "On Your Own" (1 - 4) exercises	
M	Practice	p.357-359	Do: Sets 50-54	
E	Investigation	p.249	Do: Project Card #78	
I	Meaning of addition and subtraction (adding fractions with like denominators)	MCA 1 p.465-467 p.467	Read development Do Blocks 1 - 3	
I	Addition & subtraction of fractions with unlike denominators	p.468-471 p.471	Read development Do Blocks 1 & 2	
I,M	Vertical form for adding $28\frac{5}{16} + 39\frac{7}{8}$, for subtracting $16 - 7\frac{3}{5}$, for 3 addends	p.136-140 p.139	Read development Do Blocks 1 - 3	
E	Properties involved in above	p.140	Do Expertease	

BJECTIVE B10: Cont'd

DE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Addition, giving answer as mixed numeral	p.472-473 p.473	Read development Do Blocks 1 & 2	
,M	Addition & subtraction on number line, like denominators	p.125-126 p.126	Read development Do Ex. A - L	
,M	Addition and subtraction with unlike denominators	p.127-129 p.129	Read development Do Ex. A-V	
E	Using definitions: $\frac{a}{b} + \frac{c}{d} = \frac{(axd)+(bxc)}{b x d}$ $\frac{a}{b} - \frac{c}{d} = \frac{(axd)-(bxc)}{b x d}$	p.129	Do Expertease	
,M	Properties of addition	p.133-134 p.134	Read development Do Block 1 (Ex. A, B,D &E) block 2 (Ex. B,F,&G)	Some decimal examples are included.
,M	Sums involving mixed numerals 3 addends, expressions involving addition & subtraction	p.135-136 p.136	Read development Do Ex. A - J	

OBJECTIVE B11: Demonstrate the use of reciprocals to obtain the identity element.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Definition of reciprocals	CM 1 p.149 p.150	Read 1 - 3 Read 4, 6, 8, 10	
I	Reciprocals of wholes and fractions	p.150	Do Ex. 5, 7	
I	Reciprocals of mixed fractions	p.150	Do Ex. 9	
M	Practice	p.174	Do Ex. 10	
M	Definition of reciprocal	MCA 1 p.158	Read development Do Exercises (A,C,D,G,I,J,K,L,O)	
M	Using reciprocals to solve equations like 4 m = 30	p.159-161 p.161	Read development Do Blocks 1 & 2	

OBJECTIVE B12: Perform the operations of multiplication and division with fractional numbers. (Limit: 1 digit denominators)

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Develop definition of multiplication	CM 1 p.131-32	Read 2 - 4	
I	Multiplications which have whole numbers as answers	p.132	Do Ex. 5	
I	Use of the word "of" for multiplication	p.133	Read 7	
I	Using a number line for multiplication	p.133 p.134	Read 9 - 13 Do Ex. 14	
M	Multiplication of two fractions	p.141	Do Ex. 5	
M	Cancellation by using the identity element	p.142	Read 1, 3 Do Ex. 2	
M	Fractions that reduce	p.143	Do Ex. 4	
E	Using array of units to represent multiplication	p.144-146	Read 1 - 5 Do Ex. 6	
I	Develops division by using reciprocal	p.151-152	Read 1,2,3,5 Do Ex. 6	
M	Multiplication of fractions	p.174	Do Ex. 9	
M	Division	p.175	Do Ex. 11 (a,b,e,f,i,j,k,m,n, p,q)	

OBJECTIVE B12: Cont'd

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Multiplication	p.370	Do Ex. 16(1,2)	
M	Division	p.371	Do Ex. 17 #1 - 2	
I,M	Multiplication of fractions	MCA 1 p.145-149 p.148-149	Read development Do Blocks 1 & 2	
E	Using definition $\frac{a}{b} \times \frac{c}{d} = \frac{a \times c}{b \times d}$	p.149	Do Expertease	
I,M	Properties of multiplication Finding $8 \times 2\frac{4}{5}$ by finding $(8 \times 2) + (8 \times \frac{4}{5})$	p.150-152 p.151- 152	Read development Do Blocks 1 - 4	
E	Using distributive property to compute $2\frac{1}{2} \times 5\frac{1}{4}$	p.152	Do Expertease	
I,M	Short cuts in multiplication (cancellation)	p.153-154 p.154	Read development Do Ex. A-O	
I,M	Division of fractions	p.166- 167 p.168	Read development Do Blocks 1 & 2	

JECTIVE B12: Cont'd

DE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
E	Using definition: $\frac{a}{b} \div \frac{c}{d} = \frac{a}{b} \times \frac{d}{c}$	p.168	Do Expertease	
M	Relating $7 \div 6$ to $\frac{7}{6}$ and $\frac{1}{5} \div \frac{5}{7}$ to $\frac{\frac{1}{5}}{\frac{5}{7}}$	p.169-170 p.170	Read development Do Block 1 Do Block 2 (A,B,C,E,H,I,J,K,L) Do Block 3 (A,B,C,D,G)	
M	Writing remainders as fractions in long division computation	p.171-172 p.172	Read development Do Blocks 1 & 2	
I	Multiplication	SWM 1 p.248	Do: "For You to Investigate" and #1,2(bottom)	
I	Practice	p.249	Do: On Your Own #1 - 4	
I	Practice (Mult.)	p.359	Do: Set 55	
I	Multiplication	p.250	Do: For You to Study" and #1 - 4 (bottom)	
I	Practice	p.251	Do: On Your Own #1 - 4 and Project Card #79	
M	Practice (Mult.)	p.360	Do: Set 56	
I	Practice	p.254	Do: "On Your Own" #3	
I	Division	p.256	Do: "For You to Investigate" and #1 - 3 (bottom)	

OBJECTIVE B12: Cont'd

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
	Practice (Div.)	p.257	Do: On Your Own #1 - 4	
		p.360	Do: Set 57	
I	IRO Computer	p.258	Do: For You to Investigate and #1,2 (bottom)	
	Practice	p.259	Do: On Your Own #1 - 6	Includes problems for objectives 10.

OBJECTIVE B13: Demonstrate that division by zero is undefined.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Review for whole numbers	CM 1 p.28	Read 8 - 10	
I	Fraction definition	p.150-151	Read 10-11	

OBJECTIVE B14: Evaluate an expression by using the properties to produce shortcuts in computation. (eg. $\frac{1}{2} + \frac{1}{4} + \frac{1}{2} = 1 + \frac{1}{4} = 1\frac{1}{4}$) (De-emphasize terminology.)

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Commutative of multiplication	CM 1 p.147	Read 1 - 2 Do Ex. 3	
I	Associative of multiplication	p.148	Read 4 - 6 Do Ex. 7	
I	Commutative of addition	p. 155	Do Ex. 10	
I	Associative of addition for mixed numbers	p.156	Read 11-13, 16 Do Ex. 15, 17	
I	Distributive	p.158-159	Read 1 - 2	
		p.160	Do Ex. 3	
I,M	Properties used in mixed numeral addition and subtraction computation done in vertical form	MCA 1 p.137-140 p.139	Read development Do Blocks 1 - 3	
E	Properties used to compute $28\frac{5}{16} + 39\frac{7}{8}$	p.140	Do Expertease	
I,M	Use of distributive property to compute $\frac{6}{7} \times 7\frac{3}{7}$, use of properties to rewrite expressions	p.150-152 p.151-152	Read development Do Blocks 1 - 3	
E	Distributive property used to compute	p.152	Do Expertease	

OBJECTIVE B15: Evaluate expressions involving order of operations.

eg. $\left\{\frac{3}{4} \times \frac{4}{5} + \frac{6}{12} \div \frac{3}{4} = \right\}$

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES

BJECTIVE B16: Order fractional numerals using the symbols > , < , = .

ODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Introduction	CM 1 p.139	Read 9 - 10	Insert the proper sign after they have been rearranged
I	Place fractions in order of size	p.140	Do Ex. 11 - 13	
		p.141	Do Ex. 4	
I	Fractions between fractions	p.163-165	Read 1 - 6 Do Ex. 7	
		p.168	Do Ex. 8	
M	Practice rearranging from small to large	p.367	Do Ex. 5	
M	Making number sentences true by adding the proper symbol	p.371	Do Ex. 3	
I	Comparison of fractions on a number line; comparison by finding common denominators	MCA 1 p.461-464	Read development	
		p.464	Do Block 4	
,M	Comparison of fractions by finding common denominator, by using cross-product test	p.120-123	Read development	
		p.123	Do Blocks 1 - 4	
I	Ordering fractions	SWM 1 p.234	Do: "For You to Investigate" and #1 - 5	
		p.235	Do: "On Your Own" #1 - 4	
I	Review	p.236	Do: #1 - 7	Exercise reviews objective 1,3,7,9 and 16.

OBJECTIVE C1: Maintain previously developed skills and ideas: change fractions to decimals by use of equivalent fractions, place value to 1000ths.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Place value	CM 1 p.371	Do Ex. 18, #1 (a - e)	
I,M	Place value to millionths	MCA 1 p.107-109	Read development	
		p.109	Do Blocks 1-3	
I,M		p.111	Read Development J - K	
	changing fractions to decimals by finding equivalent fraction whose denominator is a power of ten		Do Ex. L-R, A- L	
E	Looking at prime factorization of the denominator to determine if a fraction has an equivalent fractions with denominator a power of 10	p.112	Do Expertease	
I	Writing decimals	SWM 1 p.268	Do: "For You to Study" and #1 - 3	
I	Practice	p.269	Do: On Your Own #1 - 3	
I	Change fractions to decimals and place value	p.270	Do: "For You to Discover" and #1-2	
I	Practice	p.271	Do: On Your Own #1 - 3	
I	Review	p.281	Do: MiniCheck #5	

JECTIVE C2: Write any decimal numeral in expanded form. (Use exponential notation only if previously taught.)

ODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Introduction by looking at whole numbers	CM1 p.176-178	Read 1 - 7 Do Ex. 8 - 9	It is not necessary to use exponents at this stage
M	Up to ten-thousandths	p.209	Do Ex. 1	
M	Practice	p.372	Do Ex. 18, #2	
M	Expanded form, using exponential notation, including millionths	MCA1 p.110	Read development Do Ex. G - L	

JECTIVE C3: Write any decimal numeral in standard form given expanded form. (Use exponential notation only if previously taught.)

ODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Given expanded form write the decimal	CM1 p.179	Do Ex. 14	
M	Practice	p.372	Do Ex. 18, #4	
M	Standard form for exponential expanded form	MCA1 p.110	Do Ex. A - F	eg. $\frac{1}{10^3}$ indicates thousandths place

OBJECTIVE C4: Order decimal numerals using the symbols <, >, =.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Arrange a set in order	CM1 p.181	Do Ex. 3	
I,M	Comparing decimals by conversion to fractions, by inspecting digits	MCA1 p.113	Read development Do Ex. A - N	
I	Ordering decimals	SWM1 p.272	Do "For You To Investigate" and #1 - 4	
I	Practice	p.273	Do "On Your Own" #1 - 4	

OBJECTIVE C5: Demonstrate knowledge of decimals by plotting a given set on the number line. (Limit: 100th)

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Plotting decimals	CM1 p.181	Read 1 - 2	
M	Plotting sets	p.181-182	Do Ex. 4 - 6	
M	Given graph determine set	p.182	Do Ex. 7	
M	Plotting sets of hundreds and thousandths	p.182	Do Ex. 8	
M	Practice	p.211	Do Ex. 12	

BJECTIVE C6: Perform operations of addition and subtraction with decimal numerals.

ODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	By addition of fractions	CM 1 p.183	Do Ex. 1	
I	Direct method of addition	p.183	Do Ex. 2	
I	By subtraction of fractions	p.183-184	Do Ex. 4-5	
I	Direct method for subtraction	p.184	Do Ex. 6	
M	Addition	p.209	Do Ex. 4	
M	Subtraction	p.210	Do Ex. 5	
M	Addition	p.372	So Ex. 19 #1	
M	Subtraction	p.372	Do Ex. 19 #2	
M	Addition	p.373	Do Ex. 20 #1	
M	Subtraction	p.373	Do Ex. 20 #2	
I,M	Addition & subtraction of decimals	MCA 1 p.130-132 p.132	Read development Do Blocks 1 - 4	Block 4 involves rounding decimals before adding
I	Addition and subtraction of decimals	SWM 1 p.274	Do: "For You to Study" and #1,2	
I	Practice	p.275	Do: On Your Own #1 - 4	
I	Practice	p.362	Do: Set 61,62,63	

OBJECTIVE C7: Round off decimal numerals (Limit: 1000ths)

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Rules and practice	CM 1 p.204-206	Read 1 - 4	
I	Round to one, two or three places	p.207	Do Ex. 5 - 7	
I,M	Rounding decimals nearer tenth, nearer hundredth, nearer thousandth	MCA 1 p.117	Do Keeping Skillful Block 1	
M	Practice with above	p.174	Do Keeping Skillful Block 2	

OBJECTIVE C8: Multiply and divide decimal numerals by powers of 10.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Introduction	CM 1 p.189	Read 11	
I	Multiplying by powers of 10 > zero	p.189	Do Ex. 12	
I	Multiplying by number like 2000 300, etc.	p.189 p.190	Do Ex. 14 Do Ex. 16	
M	Develops rules for multiplication	p.200	Do Ex. 1,2 Read 3 Do Ex. 4	
I	Develops rules for division	p.201 p.202	Do Ex. 7-8 Read 9, 10	
M	Practice division	p.202	Do Ex. 11	
M	Practice	p.211	Do Ex. 10-11	
I,M	Multiplication by powers of 10	MCA 1 p.174	Do Keeping Skillful Block 1	
E	Multiplying a repeating decimal by a power of 10	p.185	Read Display 1 Do Ex. A-D	Preparation for finding fraction numeral for a repeating decimal.

OBJECTIVE C9: Perform operations of multiplication and division with decimal numerals.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Develop definition of multiplication	CM 1 p.185-186	Read 1 - 4	
I	Products by using fractions	p.187 p.188	Do Ex. 5, 6 Read 7 Do Ex. 8	
I	Products by estimation	p.188	Do Ex. 9 - 10	
I	Division of whole numbers	p.191	Do Ex. 3	Use traditional method
I	Using fractions to explain decimal division	p.192	Read Ex. 5 - 6	
M	Division	p.192	Do Ex. 7	
M	Division	p.195	Do Ex. 3	
M	Multiplication	p.210	Do Ex. 6	
M	Division	p.210	Do Ex. 7	
M	Multiplication	p.373	Do Ex. 19 #3	
M	Division	p.373	Do Ex. 19 #4	
M	Multiplication	p.374	Do Ex. 20 #3,4	
M	Division	p.374	Do Ex. 20 #5	
I,M	Multiplication of decimals	MCA 1 p.155-157 p.157	Read development Do Blocks 1 & 2 at top of page	
I,M	Preparation for decimal division by relating	p.173-174 p.174	Read development Do Ex. A-L	Equivalent equations

OBJECTIVE C9: Cont'd

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I,M	Decimal division	p.176-178 p.178	Read development Do Blocks 1 - 3	
I	Multiplication of decimals	SWM 1 p.282	Do: "For You to Discover" and #1-3	
I	Practice	p.283	Do: On Your Own #1-2	
M	Flowchart for multiplying	p.283	Do: Project Card #87	
I	Multiplying	p.284	Do: For You to Discover" and #1-3	
I	Practice	p.285	Do: On your Own #1 - 4	
I	Practice	p.363	Do: Sets 64,65	
I	Computing with decimals	p.286	Do: On Your Own #1 - 5	Exercise includes problems for objective 6
I	Division	p.300	Do: For You to Investigate" and #1 - 3	
I	Practice	p.301	Do: "On Your Own" #1,2,3	
I	Practice	p.364	Do: Sets 66 & 67	

OBJECTIVE C10: Convert fractions to decimals by dividing the numerator by the denominator (Limit: denominators of 100)

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Introduction to repeating decimals	CM 1 p.198-199	Read 1 - 5	If decimals repeat they will do so at a cycle less than the divisor
I	Convert fractions to repeating decimals	p.199	Do Ex. 6	
M	Non-repeating	p.209	Do Ex. 3	
M	Non-repeating	p.210	Do Ex. 8	
M	Non-repeating	p.372	Do Ex. 18 #5	
M	Mixture	p.374	Do Ex. 21 #1	Numbers like $\frac{3}{4}$ repeat zero, therefore all fractions are repeating fractions
I,M	Changing fractions to decimals; terminating & repeating decimals	MCA 1 p.179-180 p.180	Read development Do Blocks 1 - 3	
E	Generalization about repeating decimals with repetend having from 1 to d-1 digits	p.181	Do Expertease	

BJECTIVE C11: Convert decimals to fractions. (Limit: Repeating zero and thirds.)

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Explanation	CM1 p.179	Read 10	
I	Practice	p.179	Do Ex. 11	
M	Practice	p.209	Do Ex. 2	
M	Practice	p.372	Do Ex. 18, #3	

BJECTIVE C12: Use symbols and notation illustrated below. (Use fractions and decimals.)

Multiplication (i) $0.25 \times 0.1 = (0.25)(0.1)$

(ii) $0.3y = (0.3)(y) = 0.3(y)$

Division (i) $\frac{0.5}{0.4} = 0.5 \div 0.4 = 0.4\overline{)\,0.5}$

(ii) $\frac{0.2y}{0.5} = \frac{0.2}{0.5}y = 0.2y \div 0.5$

ODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES

OBJECTIVE C13: Evaluate expressions by substituting for the variable. (Use fractions and decimals and one variable.)

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES

OBJECTIVE C14: Solve the following types of conditions (Limit: fractions and decimals). a. $A + x = B$, b. $Ax = B$, c. $Ax + Bx = C$ d. $Ax + B = C$

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Conditions by related number sentences	CM 1 p.160-61 p.162	Read 3-5, 7-8 Do Ex. 6 Do Ex. 9, 10	For type $\frac{x}{a} = \frac{B}{C}$ See unit 5 Obj. 3
M	Practice for type $A + x = B$	p.369	Do Ex. 15 #5	
I,M	Solving using related equation	MCA 1 p.127-p.129	Read development Do Ex. C,D,H,J, M,Q,R,T	MCAI, p.424-425 review the idea of related equations
I	Solving using equivalence property	p.186-188	Do Ex. p.188 #2 (A-I)	
I,M	Solving $A + x = B$ using related equations	p.130-132 p.132	Read development Do Block 3	MCAI p.424-425 review the idea of related equations
I,M	Solving $Ax = B$ by using related equations	p.187	Read and discuss with teacher - development of displays 2 & 3	See Teacher's Edition p.221 for discussion of method of solution
		p.188	Do Block 1, (A-H)	Display 2 involves an equation $A \div x = B$ derived from a proportion $\frac{x}{a} : : \frac{C}{D}$

OBJECTIVE C15: Verify solutions of conditions by substitution.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES

OBJECTIVE C16: Write English sentences for mathematical sentences.
C17: Write mathematical sentences for English sentences.
C18: Solve problems using an organized approach.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I,M	Problems using multiplication equations	MCA 1 p.189-190 p.190-191	Read development Do problems A-O	eg. $m \times 27\frac{1}{2} = 55$ $0.5 \times 7.5 = m$
I,M	Using proportions for problems involving rational numbers	p.192-193 p.193	Read development Do problems A-H	eg. $\frac{\frac{1}{4}}{120} :: \frac{m}{300}$
I,M	"Fraction of" problems using proportions or equations	p.194-196 p.196-197	Read development Do problems Block 1	$\frac{1}{4}(300) = 120(m)$ eg. $\frac{3}{4}$ of 21 is what number?
I,M	Multiple-step problems	p.198-200 p.200-201	Read development Do problems A-H	$\frac{\frac{3}{4}}{1} :: \frac{x}{21}$ or $\frac{3}{4}(21) = x$
I	Uses addition and subtraction	CM 1 p.184-185	Do Ex. 1 - 10	
I	Covers all operations	p.195-197	Do Ex. 1-30	
M	Various operations	p.211-212	Do Ex. 16-22	
M	Various operations	p.374	Do Ex. 21 #2-5	
M	Various operations	p.375	Do Ex. 22 #2 - 5	
M	Multiplication	p.148-149	Do Ex. 1-3, 5-8	
M	Division	p.153-154	Do Ex. 1, 3-10	
M	Addition	p.157-158	Do Ex. 1-10	

OBJECTIVE C16, C17 & C18: Cont'd

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Subtraction	p.162-163	Do Ex. 1-8	
M	Mixture	p.171-173	Do Ex. 1-30	
M	Mixture	p.175	Do Ex. 12-20	
I	Problem solving	SWM 1 p.228	Do: On Your Own #1 - 8	
I	Problem Solving	p.240	Do: For You to Investigate and #1,2	
I	Practice	p.241	Do: On Your Own #1,2	
I	Problem Solving	p. 255	Do: On Your Own #1 - 8	
I	Recipe problems involving fractions	p.260	Do: For You to Study and #1-4	
I		p.261	Do: On Your Own #1-7	
I	Investigation	p.261	Do: Project Card #83	
M	Review	p.262-263	Do: #1 - 10	Reviews objectives 10,12
I	Problems involving money and decimals	p.276	Do: For you to Investigate and #1-3	
I	Practice	p.277	Do: On Your Own #1 - 4	
I	Problems involving measures	p.278	Do: For You to Investigate and #1-4	
I	Practice	p.279	Do: On Your Own #1-6	
I	Practice	p.287	Do:On Your Own 1-7	
I	Practice	p.305	Do: On Your Own 1-7	

BJECTIVE 1: Maintain previously developed skills; change fractions to equivalent fractions whose denominator is 100.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTE
M	Changing test scores to ratios of 100	CM1 p.226 227	Study 1, 2 Do Ex. 3	

BJECTIVE 2: Express rates and ratios in the form $\frac{a}{b}$.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTE
I	Rates	CM1 p.213	Read #1	
M	Rates to equivalent fractions	p.215	Do Ex. 9	
I	Ratio	p.219-20	Read 1, 2, 4a,6 Do Ex. 10	
M	Ratio in simplest terms	p.222	Do Ex. 15	
I	Three term ratios	p.221	Read #11	
M	Rates and ratios	p.244-245	Do Ex. 1	
I	Meaning of rate pair	MCA1 p.59-60	Read development	"Rate pair" used instead of ratio."
I	Equivalent ratio	CM1 p.217-218	Read #18 Do Ex. 19 - 21	

BJECTIVE 3: Find the missing component in any rate or ratio expressed in the equivalence condition form. e.g. $(\frac{3}{5} = \frac{x}{20})$

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTE
M	Practice	p.244	Do Ex. 4	
M	Practice	p.376	Do Ex. 24-1, 25-1	
M	Practice	p.379	Do Ex. 27, #5	
I	Equivalent rate pairs	p. 60	Do A - P	
M	Missing components	p. 61-62	Read development Do Blocks 1, 2	

OBJECTIVE 4: Solve problems involving rates and ratios.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Rates	CM1 p. 213-4	Do Ex. 2 - 3	
I	Ratio	p. 222	Do Ex. 16	
M	Rates and Ratio	p. 222-4 p. 225	Read #1 - 6 Do Ex. 8 - 25	
M	Practice	p. 245	Do Ex. 6 - 4 (omit 7)	
M	Practice	p. 377	Do Ex. 3 - 6	
I	Ratio	MCA1 p. 63-66	Read development	
M	Practice	p. 65-66	Do Ex. A - M	
M	Problems (involve 1)	p. 68-71	Read development Do Ex. A - N	
E	Multiple step problems	p. 72-75	Read development Do Ex. A - O * A - H * A - F	
M	Problems	p. 192-4	Read development Do Ex. A - O A - G	
M	"Fractions of" problems	p. 194-6	Read development Do Blocks 1 & 2	

OBJECTIVE 5: *Convert fractions to percent.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Fractions to percent	CM1 p.228	Do Ex. 7	
M	Mixed fractions to percent	p.233	Read #10 - 11	
M	Practice	p.233	Do Ex. 12	
M	Practice	p.246	Do Ex. 15, 19	
M	Practice	p.378	Do Ex. 26, 1 & 5	
I	Relating percent to fractions and decimals	MCA1 p.226-227	Read development	
		p.228	Do Ex. A - I	Also entered under Obj. 7
M	Algorithm L	SWM1 p.332	Do Exercises 1 - 5	

OBJECTIVE 6: *Convert percent to fractions.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Simple percent	CM1 p.228	Do Ex. 8	
I	Percent greater than 100	p.229	Do Ex. 5	
M	Percent with fractions	p.233	Do Ex. 8 - 9	
M	Practice	p.246	Do Ex. 16	
M	Practice	p.378	Do Ex. 26 - 2	
M	Practice	MCA1 p.228	Do Ex. A - H	Also entered under Obj. 7
M	Decimal and fraction equivalents	EMM1 p.279	Read development Do Ex. 2	Also entered under Obj. 7
M	Algorithm J	SWM1 p.331	Do Ex. 1 - 5	

OBJECTIVE 7: *Convert decimals to percent.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Whole numbers and decimals > 1	CM1 p. 231	Do Ex. 1 - 3	
I	Decimals < 1	p. 232	Read 4, 5, Do Ex. 6	
M	Practice	p. 246	Do Ex. 17	
M	Practice	p. 378	Do Ex. 26-3	
M	Practice	MCA1 p. 228	Do Ex. A - I	Also entered under Objective 3, 4, 7
M	Practice	EMM1 p. 40-41	Read development Do Ex. 2, C,D,H Do Ex. 8, A,D,E, F,H,I	
		p. 281	Do Ex. 1, 2	
M	Algorithm K	SWM1 p. 332	Do Ex. 1 - 5	

OBJECTIVE 8: *Convert percent to decimal

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Practice	CM1 p. 233	Do Ex. 7	
		p. 246	Do Ex. 18	
		p. 378	Do Ex. 26-4	
M	Practice	MCA1 p. 228	Do Ex. A-I	Also entered under Objective 3, 4, 7
M	Decimal and fraction equivalents	EMM1 p. 279	Read Development	
M	Practice	p. 279	Do Ex. 2	
M	Algorithm I	SWM1 p. 331	Do 1 - 5	

OBJECTIVE 9: Solve problems involving percent.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Examples	CM1 p. 234-5	Read #1 - 4	
M	Practice	p. 235-6	Do Ex. 5, 6, 9, 10, 12, 13, 17, 18, 19	
E	Unknown in denominator	p. 235-6	Do Ex. 7, 8, 11, 14, 14, 15, 16, 20, 21	
E	Sales tax, discount	p. 237-8	Read #1 - 5 Do Ex. 6 - 15	
E	Commission	p. 239-40	Read #16 - 17 Do Ex. 18 - 26	
E	Simple Interest	p. 241-2	Read #27 - 30 Do Ex. 31 - 33	
M	Practice	p. 246 p. 247 p. 248	Do ex. 20 - 26 Do Ex. 34 - 36 Do Ex. 41, 43, 48	
E	Business	p. 247 p. 248	Do Ex. 27 - 33 Do Ex. 37 - 40, 42, 44 - 47, 49, 50	
M	Practice	p. 378	Do Ex. 27, #1, 2	
E	Business	p. 379	Do Ex. 27, #3, 4	
M	Practice	p. 379	Do Ex. 28	
E	Business	p. 379-80	Do Ex. 29, 30	
M	Problems using equivalence conditions	MCA1 p. 229-31	Read development Do Ex. A - D	
E	Interest, commission, discount	p. 220-2	Read development Do Ex. A - J	
M	Percent of increase & decrease	p. 223-5	Read development Do Blocks 1 & 2	
M	Multiple step	p. 232-4	Read development Do Blocks 1 & 2	

OBJECTIVE 9 - Continued

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
E	Compound interest	MCA1 p. 235	Do Expertease	
M	Practice	p. 123	Complete charts, Block 1, 2, 3	
E	Percent & Graphs	p. 236-237	Read development Do Ex. A - G	
I	Use of percent formula	p. 251	Read development	
E	Use of i = prt	p. 256-260	Read development Do all except J, N	
M	The percent symbol	EMM1 p. 278 p. 279 p. 285	Read development Do Ex. 1 Do Ex. 21, 22	
E	Percent & Graphs	p. 408-411	Read development Do all	
I	Understanding percent	SWM1 p. 292 p. 293	Do 'For You to Study' #1 - 3 Do 'On Your Own' #1 - 5	
I	Percent problems	p. 294 p. 295 p. 6	Do 'For You to Study' #1 - 5 Do 'On Your Own' #1, Do 'For You to Study' Do 'On Your Own' #1 - 3	
I	Practice	p. 299	Do 'On Your Own' #1 - 4	
I	Review	p. 307	Do Ex. #5	

OBJECTIVE 1: Explain measurement as a comparison to some unit.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Introduction	CM 1 p.268—	Read No. 4	NOTE: Stress three steps in measuring: a) choose unit b) compare to unit c) count units
	(use of non-standard units)	p.270	Do Nos. 5,6,7,8	
I	Introduction	SWM 1 p.4	Do Investigation Ex. Nos. 1,2,3,4	
M	Practice	p.10	Do Investigation	

OBJECTIVE 2: State reasons as to why a standardized system of measurement is necessary.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Need for standard units	CM 1 p.271	Read No. 9	
M	Practice	SWM 1 p.4	Do No. 3	
		p.5	Do No. 1 & 2	
M	Project Card	p.11	Do Project Card no. 5	

OBJECTIVE 3: Express measurements correctly by including the numeral and unit.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES

OBJECTIVE 4: List the SI prefixes and explain what they mean, as well as the mathematical relationship that exists between each. (Limit: mm, cm, dm, m, dam, hm, km)

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER N
I	SI	MCA 1 p.269	Read A - E	NOTE: Che SI symbol and spell for all exercises
I	Generation of common units	p.271	Read M - O and chart	
M	Table	p.476	Learn table (SI units of length)	
I	Table	EMM 1 p. 348	Read "The Metric System"	Note: SI Spelli
		p.349	Learn prefixes &relationships	

OBJECTIVE 5: Convert SI units of length from one unit to another. (Limit: mm, cm, m, km)

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER N
M	Practice	MCA 1 p.272	Do Block 1, (M - R)	NOTE: Che SI symbol and spell for all exercises.
M	Practice	EMM 1 p.349	Do 8.1 (1-10)	
M	Practice	p.350	Do Ex. 3, 4, 5	

OBJECTIVE 6: Measure objects accurately using the SI units of length. (Limit: mm, cm, m)

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Measure segments	EMM 1 p.350	Do Ex. 1 & 2	
I	Precision	p.353 p.354	Read "Precision of a measurement"	
I		SWM 1 p.9	On Your Own #2	
M	Project card	p.9	Do Project Card #3 with cm only.	
M	Project card	p.11	Do Project Card #4. Use cm.	All body measures usually done in cm (height, size, of clothing, shoes, etc.)
E	Practice	p.12 p.13	Do Investigation Do Ex. #1,2,3	
M	Project Card	p.13	Do Project Card	(Use SI)

OBJECTIVE 7: Estimate the measure of various objects using the SI system and check by measuring.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Practice	SWM 1 p.5	Do Project Card #2	In unit column specify SI units
I	Activity	p.6	Do Activity Use cm only	
M	Practice	p.6	Do Nos. 1-4	-change to SI units
		p.7	Do Nos. 1,2,3	- change to SI units

OBJECTIVE 8: Perform the operations of addition and subtraction with SI units of measure.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOT
M	Practice	MCA1 p.276	Do G, H, I	

OBJECTIVE 9: Solve problems involving measurement

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NO
M	Problems	MCA1 p.184	Do A, E, F, J	Change uni to SI
E	Perimeter problems	p.277	Do A - F	Change uni to SI
		p.279	Do Block 1 (A-F)	

OBJECTIVE 10: *Write the standard units of mass and capacity in SI and use SI prefixes to generate larger and smaller units.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NO
I	SI	MCA1 p.270	Read F - J	Note: Che SI symboli and spelli for all exercises
I	Generation of common units	p.271	Learn chart Display 9	
M	Practice	p.272	Do Block 1, (A-L)	
M	Mass	EMM1 p.368	Read "Metric Measures for Mass and Weight" Do Ex. 1, 2	-Define ma -Do not us mass and weight as synonymou terms

OBJECTIVE 1: *Use the terms base, power, exponent, square, and cube.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Definitions and terminology	CM1 p. 100	Read and study	
M	Practice	p. 101	Do Ex. #2, 3, 5	
I	Squaring a number	p. 102	Read Ex. #6, 1 Do Ex. #2	
I	Definition of power	MCA1 p. 47	Read and study material related to Ex. J, K, L	
M	Practice	p. 48	Do Ex. K, L, and Block 1	
I	Definition of exponential notation	EMM1 p. 12-13	Read "Exponential Notation" Do Ex. #1, 2, 6	

OBJECTIVE 2: *Write the values for powers. (Limit: bases - whole numbers; exponents - whole numbers). Standard name of a power.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Practice	CM1 p. 101	Do Ex. #4	
I	Computing powers	MCA1 p. 47	Read and study material related to Ex. J, K, L	
M	Practice	p. 48	Do Block 2	
M	Practice	EMM1 p. 12-13	Do Ex. #3, 4	

OBJECTIVE 3: *Use exponential notation to write the expanded form of whole a
decimal numerals.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Expanding whole numerals without exponents	CM1 p. 9-10	Read and study Ex. #1 - 4	
M	Practice	p. 10	Do Ex. #5 - 7	
I	Expansion using exponents	p. 10	Do Ex. #5 (at top)	CM1 does not u 1 = 10^0 in the development
		p. 107	Do Ex. #3	
M	Review of place value	p. 176-177	Read and study	
I	Expanding decimal numerals using exponents	p. 178	Study Ex. #7	
M	Practice	p. 178	Do Ex. #8	
I	Numeration and place value of whole numerals	MCA1 p. 104-105	Read material on numeration and Ex. B, C, D	Teachers may to assign mate ial on how to read numerals. (See p. 106 o p. 168 in the Teacher's Edition.)
		p. 105	Do Ex. E - M	
M	Practice	p. 106	Do Block 1	
M	Place value of decimal numerals	p. 107	Read and study Ex. A - D	
		p. 108	Do Ex. E - Q	MCA1 does not use 1 = 10^0 i their develop- ment
I	Use of exponents in place value	p. 109	Study Display 4	
		p. 109	Do Ex. T	
M	Practice	p. 110	Read and do Ex. A - C	
		p. 110	Do Ex. D - K (in black letters)	
		p. 110	Do Ex. A - L (in yellow letters)	

OBJECTIVE 3: Continued

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Practice	EMM1 p. 14	Do Ex. #5	
I	Zero and one as exponents	p. 14-15	Read Do 'Let's Explore' 1 - 3	

OBJECTIVE 1: Maintain previously developed skills and ideas: point, line, ra segment, plane, space, and their symbols.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTE
M	Closed curves, polygons (sides are segments), points in interior and exterior plane.	MCA1 p.436 p.438	Read development Do Ex. A - G	Reteaching c Grade 6 deve opment. Note that line segment are defined straight cur
M	Ray, line, angle, vertex, angle measure, congruent angles, right vertices & angles of polygons	p.438-441 p.441	Read development Do Ex. A - D	
M	Parallel lines, parallelogram, rectangle, square, congruent sides	p.444 p.445	Read development Do Ex. 1 & 2	
M	Points	EMM1 p. 98	Read and do Let's Explore, 1 - 10	
M	Geometric figures	p. 99	Read	
M	Segments	p.100-101	Do 1 - 4	
		p.101-103	Ex. 1 - 18	
M	Rays	p.103-bottom -105	Read Do 3.4, Let's Explore, 1 - 8	
M	Lines	p.105-106	Do 3.5, Let's Explore, 1 - 5	
M	Practice	p.106-107	Ex. 1 - 12	
M	Planes	p.115-116	Read	
M	Points and lines	CM1 p.250-251	Read 1 - 6 Do 7	
M	Segments	p.252-253	Read 8 - 11 Do 12, 13	
M	Rays	p.253-255	Read 14 - 17	
M	Lines	p.255-258	Read 18 - 35	
M	Planes	p.259-260	Read 1 - 4	

OBJECTIVE 2: Determine whether two polygons or circles are congruent.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Similar triangles, corresponding parts congruence as a special case of similarity, tracing	MCA 1 p.446-448 p.448-449	Read development Do Blocks 1 - 3	Review of grade 6 development If the tracing of one polygon fits exactly on another polygon, the two figures are congruent. This may be used to introduce at a very simple level the ideas of sliding, turning and flipping objects (using tracing paper).
I	Corresponding sides	p.324-325	Read and do Block 1, 2	

OBJECTIVE 3: Fill in the necessary requirements to complete diagrams for the motion of a slide using correct correspondence notation.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I,M	Introduction to coordinate plane	MCA 1 p.308-310 p.310	Read development Do Blocks 1, 2	
I,M	Translations (slides) in the coordinate plane	p.316-318 p.319-320	Read development Do Blocks 1 - 4	Notation used: (+1,+1) ↓ (+6,+1) (+4,+3) ↓ (+9,+3) (+3,+4) ↓ (+8,+4) Indicates move of 5 units to right.

OBJECTIVE 4: Determine whether a pair of congruent polygons were produced by a slide.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
				Students want to count the p that the slide arrow begins as point one. Point out to t that this is not what your a doing. You are counting the spaces between the points; y may wish to use the analogy a baseball game. If you hit double do you go to first ba Triple do you go to second? ball player does not count h plate as base one. Do not co the first dot.

OBJECTIVE 5: *Determine one slide that is equivalent to the combination of tw slides.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOT

OBJECTIVE 6: Determine the reflection (flip) image for any polygon when prov with the mirror line.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOT
I,M	Reflections in a a line; find image, given mirror line; find mirror line, given image	MCA1 p. 82-84 p. 84-85	Read development Do Ex. A - D	"Mirror lin called "lin reflection"
E	Using reflections	p.103	Do Ex. A - I	
M	Finding images	p.212	Do Test 73	
I,M	Introduction to coordinate plane, axes, quadrants, coordinates of a point	p.308-310	Read development Do Blocks 1 and 2	Presume kno ledge of integers. (Se MCA1, Chapt 17)
I,M	Reflections in the coordinate axes	p.311-313 p.314-315	Read development Do Blocks 1 - 4	
E	Reflection in the origin	p.315	Do Expertise	

OBJECTIVE 7: Determine the mirror line for a polygon and its mirror image.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Determining line of reflection	MCA 1 p.256	Do Block 1 (A-E)	

OBJECTIVE 8: Determine whether a pair of congruent figures were produced by a reflection.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
				May use mira's as a discovery exercise to try to locate the mirror line for pairs of congruent figures. Conclude that if no mirror line can be found, then the figure could not be a reflection.

OBJECTIVE 9: *Determine the reflection image for any polygon after a combination of two reflections.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES

OBJECTIVE 10: Obtain all the mirror symmetries for various polygons.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Introduces symmetry	MCA 1 p.86	Read	
		p.87	Do Ex. F-I	
		p.88	Do Blocks 1-2	Involves knowledge of coordinate plane and integers.
I,M	Axes of Coordinate plane as lines of symmetry	p.311-313	Do development	
		p.314	Do Block 2	
I	Symmetry	SWM 1 p.110	For You to Investigate What are Your Ideas #1-4	
		p.111	On Your Own 1-2	
		p.111	Project Card 40	

OBJECTIVE 11: Obtain the rotation image for any polygon. (Limit, $*\frac{1}{4}$, $\frac{1}{2}$, $*\frac{3}{4}$, cw, ccw)

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER N

OBJECTIVE 12: Fill in necessary requirements to complete diagrams for the motion of a turn.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER N
				Care should be taken when studen must draw own turn arrow from tu command. Use the 4 dots around centre and arrows should begin a end on a dot.

OBJECTIVE 13: Find the turn symmetries of a given figure.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER N

OBJECTIVE 14: *Determine the rotation image for any polygon after a combination of two turns.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER N

OBJECTIVE 15: Determine whether a pair of congruent figures were produced by a turn.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER N

OBJECTIVE 16: Complete an Invariance Table for the slide, reflection and $\frac{1}{2}$ turn.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER N

OBJECTIVE 17: Classify polygons (Limit: triangles, quadrilaterals, pentagons, hexagons, octagons, and decagons.)

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Introduction to polygons	CM 1 p.263-265	Read 1 - 7	
I	Classification of polygons	p.265-266	Do Ex. 8 - 12	
I	Classification of triangles by sides	p.302-304	Do Ex. 1-9, 15-17, 19, 21, 23	
I	Polygons	EMM 1 p.124-125	Read and Do 3.11 Let's Explore	
		p.126	Do Ex. 1 - 6	
I	Closed curves and polygons	MCA 1 p.436-437	Read and do A-K	
		p.438	Do A-G	

OBJECTIVE 18: Using the number of lines of symmetry, classify a triangle by its sides. (Note: Include traditional classification.)

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I,M	Lines of symmetry of isosceles, equilateral and scalene triangles	MCA 1 p.89-90	Read development	Scalene- no lines of symmetry. Isosceles - one line of symmetry. Equilateral - more than one line of symmetry.
		p.90	Do Exercises	
				Relates side classification and angle classification. (See MCA 1 p.91-93)
M		SWM 1 p.114	For You to Investigate What are Your Ideas 1-3	
		p.115	On Your Own 1-3 Project Card 42	

OBJECTIVE 19: Classify quadrilaterals.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTE
I	Definition of rectangles, squares and parallelograms	CM1 p.290-292	Read and do 11 - 20	The definiti of these fig ures depends on the measu of The term rig angle or 1/4 turn should be familiar students eve though they do not study angles in Grade 7
I	Classification	MCA1 p. 94-95	Read A - H	
		p. 96	Do Blocks 1 - 2 (a, b, c, e)	
I	Classifying	p.100	Do Test 38	
		p.213	Do Test 76	
		p.445	Do Block 1	
I,M	Quadrilaterals and symmetry	SWM1 p.120	For You to Investigate, What are Your Ideas, 1, 2	
		p.121	On Your Own, 1,2,3	

OBJECTIVE 20: Determine the properties for parallelograms, square, rectangle and rhombus. (Limit: (i) opposite sides congruent; (ii) (ii) opposite angles congruent; (iii) opposite sides parallel; (iv) diagonals bisect each other; (v) diagonals bisect the figure (vi) diagonals of square and rhombus bisect each other.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTE
I	Opposite sides congruent	CM1 p.292	Do Ex. 21,22	
I,M	Properties of	MCA1 p.444-445	Read A - H, Do Block 2	
		p.239	Do Block 4	

OBJECTIVE 21: Identify the parts of a circle.
(Limit: center, radius, diameter, chord, arc, semi-circle, tangent, and secant.)

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Development of the concepts of a circle.	CM 1 p.305-306	Do Ex. 1 - 3	
I	Definition of circle, center, radius, diameter	p.306-307	Do Ex. 4	
I	Radius, tangent, secant, chord, diameter, symmetry	MCA 1 p.97-98	Read A-J	Do Objectives 21 and 22 together. See developmental exercises using paper folding. Arc and Semi-circle not included.
M	Identifying parts	p.99 p.100	Do Ex. A-O Do Test 39	

OBJECTIVE 22: Determine the properties for the circle (motions make this very simple). (Limit: (i) diameter bisects circle (ii) diameter equal two radii (iii) the centre is always equal distance from the circle.)

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES

OBJECTIVE 23: *Use motion geometry to design wall paper.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES

OBJECTIVE 24: *Use paper folding to produce stars and regular polygons.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Figure symmetry	SWM 1 p.112 p.113	Do an Activity for You Do On Your Own, 1,2	

TEXT REFERENCES

LEVEL 8

OBJECTIVE 1: Maintain previously developed skills - terminology and Venn diagrams that relate to the development of number systems. (Set, subsets, finite and infinite sets, the universal set, equal sets, equivalent sets, empty or null sets.)

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Define set	CM2 p. 1	Read paragraph 1 Do #2, A-F	Refer to MCA1, p. 8-11 for similar materials.
	Equivalent and equal sets	p. 1-2	Read Section 1 Do #2, A-F	
	Signs and ways of describing sets	p. 2-3	Read Sections 1, 2, 3, 4 and do the exercises in each section	
	Finite and infinite sets	p. 4	Read Sections 1 - 4 Do #4	
	Symbol $\in$	p. 5	Do #2 and #3	
	Empty set	p. 5 p. 6	Read Section 1 Do #2, A-H	Two symbols used $\Phi, \{\,\}$.
	Subsets	p. 6-7	Do #3 A-K Do #4 A-E	No. of subsets possible with n elements in set is 2^n.
M	Sets and Numbers	SWM2 p. 16 p. 17	Do 'For You to Investigate' and #1, 2, 3. Do 'On Your Own' #1 - 3	

OBJECTIVE 2: Tabulate union and intersection. (Limit: 3 sets and universe)

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Intersection of sets	CM2 p. 7-8	Read Section 1	Much material in MCA1 re: intersection and union of sets, p. 11-1
		p. 8	Do #2, Read 3 & 4	
		p. 9	Do #5, Read 6 Do #7	
M	Union of sets	CM2 p. 10	Read Sections 1 & 2 Do #3, A-H	
		p. 11	Read Sections 4 & 5 Do #6, A-D	
M	Sets of numbers and points	MCA2 p. 396	Read	
		p. 397	Read Do Blocks 1 and 2	

OBJECTIVE 3: Illustrate union and intersection of sets using Venn diagrams. (Limit: 3 sets)

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Venn Diagrams	CM2 p. 17-21	Study	
		p. 21	Do #9, A-D	
		p. 22	Do #11, 12	
		p. 22	Read #13 Do #14	
	Venn diagrams applied to problem situations	p. 23	Study #15 Do #16	
	Review	p. 25	Do #1 - 14	Review of Objectives 1,2,
		p. 415-416	Do #1 - 12	
M	Venn diagrams	MCA2 p. 379-381	Read	Interpret Ven diagrams with respect to th meaning of "a "some", "no".
		p. 382	Do Block 1 & 2	

OBJECTIVE 3: Continued

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Logical diagrams	p. 383-384	Read	Use Venn diagrams to make logical conclusions.
		p. 384	Do Block 1	
		p. 385	Do Block 2	
		SWM2 p. 172	Do 'For You to Study' and #1 and #3	
		p. 173	Do 1 - 3	

OBJECTIVE A1: Maintain previously developed skills; SI units of length; convert SI to SI

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Metric System	CM2 p. 376-379	Study p. 376-378 #1 - 7 Do p. 378-379 Ex. 8 - 14	Check symbolism and spelling
M	Metric System	MCA2 p. 130-131	Study & Do Measurement 2 A - M	Check symbolism and spelling
M	Conversion in SI	p. 133 p. 134	Do Ex. Block 1, 2 Do Expertease	
M	Review of Metric System	EMM2 p. 150-151	Study Development Do Ex. 1, 2, 3	Check symbolism and spelling
M	Conversion in SI	p. 217	Do Ex. #1, R - T	
M	Units of length	SWM2 p. 118-119 SWM2 p. 121	Do Investigation -What are your ideas -On Your Own - 2 - Do 4, 5	Check symbolism and spelling
M	Measuring with a centimetre ruler	SWM2 p. 122-123	Do Investigation -What are your ideas -On Your Own 1, 2, 3	
M	Project Card	SWM2 p. 123	Do Project Card 36	

BJECTIVE B1: Define area measure as the number of unit squares a region contains.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Defintion of Area	CM2 p. 350-1 p. 352-7	Study 1 - 5 Study	Note development formula
I	Define and use non-standard units	EMM2 p. 211-4	Study p. 211-215 Do p. 215, 1 - 10	Use "cm" in place of "in".
I	Measuring Regions	SWM2 p. 210-11	Do - Investigation - What are Your Ideas - On Your Own 1,2	
M	Project Card	p. 211	Do Project Card #53	
M	Finding Area	p. 212-3	Do - Discover - What are Your Ideas - On Your Own	
M	Making an Automatic Area Finder	p. 214-5	Do - Activity - What are Your Ideas - On Your Own	

BJECTIVE B2: Express measure of area correctly by including numeral and unit.

ODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES

OBJECTIVE B3: List the SI prefixes and explain how to use them with SI units of area, to designate larger and smaller units of area. (Limi mm^2, cm^2, dm^2, m^2, dam^2, hm^2, km^2)

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTE
I	Metric Measures of Area	CM2 p. 379-380 p. 380	Study #1, 2 Do #3, 4	Check symbolism and spelling
I	Metric Areas	EMM2 p. 214-215 p. 224 p. 247	Study Do 2, 3 Do 6 - c, d, e	Check symbolism and

OBJECTIVE B4: Convert from one unit of measure to another. (Limit: mm^2, cm m^2, km^2, ha^2)

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Metric Area	CM2 p. 380	Do p. 380 #3, 4	Also entered for Objective B3.

OBJECTIVE B5: Perform the operations of addition, subtraction, multiplicati and division with units of measure.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES

OBJECTIVE C1: Measure a given angle using a protractor and give its measure in degrees ($\pm 2^{\circ}$). (Limit: 180°.)

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Using a protractor	SWM2 p.132-133	Do - Investigation - What are Your Ideas	
		p.131	Do - On Your Own #1 and #2	
		p. 132	Do - For You to Investigate - What are Your Ideas	
		p.133	- On Your Own 1, 2, 3	
		p.134	- Project Card #40	
		p.140	Do - Chapter Review #4, 7, 8	

OBJECTIVE C2: Estimate the size of a given angle ($\pm 20^{\circ}$). (Limit: 180°).

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES

OBJECTIVE C3: Given the measure of an angle in degrees draw it using a protractor ($\pm 2^{\circ}$). (Limit: 180°).

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Using a protractor	SWM2 p.133	Do - On Your Own #3 a - d	

OBJECTIVE 1: Maintain previously developed skill: turn, slide, reflection classification of polygons.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Classification of quadrilaterals	CM2 p. 338-342	Read 10 - 11 Do Ex. #18 - 24	This treatment may be too rigorous for a maintenance objective.
M	Slide	MCA2 p. 261	Do A - K	Uses Co-ordinate Plane, omit parabolas
M	Slide and reflection	MCA2 p. 208	Do 'Keeping Skillful'	
M	The 3 motions	p. 267	Do Block 2	
M	Slide and reflection	p. 456	Do Block 1 and 2	
M	Reflections	SWIM2 p. 62-63	What are your ideas 1 - 2 On Your Own 1 - 4	
M	Rotations	p. 64-65	Read investigations Do What are your ideas 1 - 3 On Your Own 1 - 4	
M	Symmetry	p. 66-67	Do Activity and What are your ideas 1 - 3 On Your Own 1 - 3	
M	Reflection	p. 269	Do Exercises	

OBJECTIVE 2: State the properties of a slide. (Limit: (i) an original and image are congruent with respect to the whole figure as well as the various parts; (ii) line segment and image are parallel; (iii) line segments joining points and their images are congruent and parallel.)

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Properties	MCA2 p. 278	Do G	Important to use properties to produce image without performing the motion. This gives an application of the properties. If you are using MCA please assign the exercises for Objectives 2, 3, and 4 after you have taught the 3 objectives. Assign Ex. A-H
M	Properties	MCA2 p. 452-455	Do A - D	

OBJECTIVE 3: State the properties of a turn. (Limit: (i) an original and its half turn image are congruent with respect to the whole figure as well as the various parts; (ii) a line segment and its half turn image are parallel; (iii) a segment joining a point and its half turn image is bisected by the the turn center.)

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES

OBJECTIVE 4: State the properties of a reflection. (Limit: (i) an original and its reflection image are congruent with respect to the whole figure as well as the various parts; (ii) a point and its reflection image are the same distance from the mirror line; (iii) the mirror line is perpendicular to the line segment joining a point and its reflection image.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Properties	MCA2 p.277-278	Do A - F, h	See note - Objective 2
M	Properties	MCA2 p.455-456	Do E - I	
		p.456	Do Block 1 and 2	

Objective 5: State that *(i) a slide reflection is a combination of a slide and a reflection; (ii) that an original and its image are congruent with respect to the whole figure as well as the various p

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Successive Motions	MCA2 p.265-267	A, B Block 1 A - E, G	Note: uses co-ordinate plane

OBJECTIVE 6: State that (i) any motion or combination of motions is called a glide; (ii) an original and its image are congruent under a gli

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES

OBJECTIVE 7: Define acute, obtuse and right angles.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Practice	CM2 p.307 p.310	Do Ex. #1 - 2 Do Ex. #15 - 16	No definition is given
M	Definition of	MCA2 p.461	Read top of page	
M	Review of parts of angle and right angle	SWIM p.52	Investigate 1 - 3 Your ideas 1 - 4	
M	Naming angles	p.53	On Your Own 1 - 5	

BJECTIVE 8: Classify triangles by their angles.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Practice	CM2 p.283	Do Ex. #7 - 8	Teach Objectives 9 and 10 together
M	Defintions of	MCA2 p.461	Read. Do D - G	Do Objectives 9 and 10 together
I	Classification of right, equilateral, and isosceles triangles	SWIM2 p.68-69	Do Activity and What are Your Ideas 1 - 4 On Your Own 1 - 3 Project 22	
E	Designs	p.69		

BJECTIVE 9: Define the terms regular and diagonals as applied to polygons.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Diagonals	CM2 p.282	Do Ex. #5	$\frac{m(m - 3)}{2}$ is the formula for finding the number of diagonals of a polygon. m is the number of sides of the polygon.
M	Diagonals	MCA2 p.465 p.467	A, B Block 2, D	
M	Diagonals	SWM2 p.192 p.193	What are Your Ideas, 1 - 3 On Your Own, #1	

OBJECTIVE 10: Classify quadrilaterals with respect to their diagonals.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES

OBJECTIVE 11: Classify triangles by their sides.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Practice	CM2 p. 283	Do Ex. #7 - 8	Teach Objecti 10 and 11 together
E	Given angles classify by sides	p. 316	Do Ex. 7	
M	Definition of	MCA2 p.460	Read	Refers to lin of symmetry
M	Uses acute, obtuse	p.463 p.464	Do Block 1 - B,D,F Do Block 2 - C	

OBJECTIVE 12: Determine the properties of triangles using the lines of symmetry.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Angles opposite equal sides	CM2 p. 315-316	Do Ex. 4 - 6	
M	Lines of symmetry	MCA2 p. 460	Read and Do A - C	

OBJECTIVE 13: Show that the basic requirements for a pair of triangles to be congruent is one of the following: SSS, SAS, ASA.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Determine if there is enough information to prove congruence	MCA2 p. 167 p. 191	Do Block 1 Do Test 52	This objective could be difficult for a number of students. Complete mastery is not essential
E	Using diagonals of quadrilaterals prove congruence of the triangles formed.	p. 168	Do Expertease	

OBJECTIVE 14: Demonstrate that AAA is not a sufficient relationship to produce congruence.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Similar triangles	MCA2 p. 155-157	D and E	Congruent triangles are si lar but simila triangles are not always congruent.
M		MCA2 p. 159	Use display 3	
M	Are triangles similar	MCA2 p. 161	Do Block 1	
M	Are triangles similar	MCA2 p. 186	Do Test 44	
I	Similar figures	SWIM2 p. 196	Do For You to Investigate	
		p. 197	Do On Your Own #2	
I		p. 198-199	For You to Investigate What are Your Ideas 1 - 2 On Your Own	Discuss congruence for these problem

OBJECTIVE 15: Determine the angle sum of a triangle (glide the angles to form a line).

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Sum of angles	CM2 p. 314	Do Ex. #1 - 3	
I	Sum of angles	MCA2 p. 461	Do E, F, G	
I	Discovery of property	SWIM2 p. 134-135	Do Investigate and What are Your Ideas 1 - 3 On Your Own 1 - 2	Excellent exercises

OBJECTIVE 16: Determine the angle sum of polygons.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Quadrilaterals	CM2 p. 336	Do Ex. # 4 - 9	Excellent exercises
I	Quadrilaterals	SWM2 p. 135	#3	

OBJECTIVE 17: Identify pairs of angles. (Limit: supplementary, complementary, linear, opposite and adjacent).

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Defines supplementary, complementary, opposite	CM2 p. 307-310	Do Ex. #3 - 13, 17 and 18	

OBJECTIVE 18: Determine the properties of the angles formed by two parallel lines and a transversal. (e.g. use a slide and a half turn) (Limit: corresponding, alternate)

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Reviews meaning of parallel lines	CM2 p. 326-327	Read 1 - 4	
I	Transversal	p. 328	Read 5 - 6	
I	Classifying angles	p. 328-329	Read 7 - 8	
		p. 330-	Do Ex.#9 - 12	
M	Problems	p. 332-333	Do Ex. #17 - 20	
E	Sum of exterior	p. 331	Do Ex. #13 - 16	

OBJECTIVE 19: Develop a formula for the perimeter of any polygon. (e.g. P = sum of sides)

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Develops formula	MCA2 p. 240	Do Ex. A - E	Only regular polygons
I	Gives formula	p. 468	Do Ex. A - F	
I	Perimeter by measuring	SWIM p. 119	Do On Your Own 1 - 2	No formula given Refer to Activities f "Guess My Wo game, for review of Obje ives 1 - 18.

OBJECTIVE 20: Sketch a required altitude given a triangle or a quadrilater

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTE
I	Altitude of triangles	MCA2 p. 462	Read and Do H - L	
M	Tell if line of symmetry	p. 463	Do Block 1 - A, C, E Do Block 2 - A, B	Good exercis
I	Quadrilaterals	p. 466	Read top of page	

OBJECTIVE 21: Develop the formula A = ab for rectangles and squares.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Area by sweeps	CM2 p. 352-353	Read 9 - 10	By using the formula A = ab the student uses the concept of altitude more often. It also shows the relationship between the various formulas. Change A=bh to A=ab
I	Formula A=lw	SWIM p. 216	Read For You to Study What are Your Ideas, 1 and 3 On Your Own 1 - 3	Refer to Objective 25 if you wish to assign problems at this time.
I	Formula	MCA2 P. 469	Read, Do G, H	Refer to Activities "Fenced In" Game of Squares

BJECTIVE 22: Demonstrate that A=ab is also the area formula for a parallelogram. (Glide one section to form a rectangle.)
Note: Verbalize formula.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Develops formula	CM2 p. 356-357	Do Ex. #15 - 17	See Obj. 25 for problems.
I	Develops formula	MCA2 p. 469	Read, Do I, J	
I	Discovery of	SWIM2 p. 212	What are Your Ideas, 4	Discuss picture.

OBJECTIVE 23: Demonstrate that $A = \frac{1}{2}ab$ is the area formula for a triangle. (Glide image to form a parallelogram). *Note: Verbalize for*

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTE
I	Develops formula	CM2 p. 355-356	Do Ex. #13-14	See Obj. 25 for problems
I	Gives formula	SWIM2 p. 216-217	Read For You to Study What are Your Ideas 2 On Your Own 4	Flow charts
I	Formula	CM2 p. 470	Read - after K	

OBJECTIVE 24: Demonstrate that $A = \frac{1}{2}a(b_1 + b_2)$ is the area formula for a trapezoid. (Glide image to form a parallelogram).

Note: Verbalize formula.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOT
I	Develops formula	CM2 p. 354	Do Ex. #11	See Obj. 25 for problem
I	Develop formula	SWIM2 p. 213	Study picture at top	Discuss formula.

OJBECTIVE 25: *Find the area of a region using Pick's Theorem.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOT

OBJECTIVE 26: Solve perimeter and area problems for various triangles and quadrilaterals given diagrams or word problems. (Recognize standard form of formula; note the similarity between formulas and other conditions, solve for width, length, etc.)

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Various polygons	CM2 p. 357-359	Do Ex. #18 - 22	
M	Shaded areas	p. 359	Do Ex. #23 - 24	
M	Trapezoids	p. 355	Do Ex. #12	
M	Various polygons	p. 351	Do Ex. #4	
M	Various polygons	MCA2 p. 125 p. 141 p. 142	Do Ex. A - F Do Ex. C - H Do Ex. A - G	
M	Various Polygons	p. 228	Do Block 2	
M	Perimeter	p. 242	Do Block 2	Regular polygons only
M	Perimeter and Area	p. 471	Do Block 1 - 2	
M	Rectangles and triangles	SWIM2 p. 232	Do Ex. #1 - 3	Area only

OBJECTIVE 27: Determine the formula $C = \pi d$ for the circumference of a circ
Note: Verbalize formula.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTE
I	Development of formula	CM2 p. 347-348	Do Ex. #14 Read 15 -16	If you wish do circumfer ence problem at this poin please refer Obj. 28.
I	Develops formula	MCA2 p. 240-242	Read. Do E - M	
I	Measuring circumference and finding $\frac{c}{d} = \pi$	SWIM2 p. 126-127	Do Activity and What are Your Ideas 1 - 3 On Your Own 1 - 4	
E	Charts of bicycle tires	p. 127	Project 38	

OBJECTIVE 28: State the formula $A = \pi r^2$ for the area of a circle.
Note: Verbalize the formulas.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTE
I	Area by sweeps	CM2 p. 360-362	Do Ex. #1 - 3	See Objectiv 28 for prob-lems
I	By sectors	p. 363-365	Do Ex. #6	
I	Estimation of Area	SWIM p. 218-219	For You to Investigate What are Your Ideas 1 - 4 On Your Own 1 - 3	
I	Develops an approximate formula	SWIM p. 220	Do For You to Investigate What are Your Ideas 1 - 2	
E	Discover formula	p. 221	Project 55	

OBJECTIVE 29: Solve circumference and area problems for circles given diagrams or word problems

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Area	CM2 p. 362	Do Ex. #5	
M	Shaded areas	p. 366	Do Ex. #7, 14	
M	Problems	p. 366	Do Ex. #8 - 13	
I	Circumference	p. 348-349	Read 17 - 19 Do Ex. #20-23, 26	Careful explanation required (#18 in particular)
M	Circumference	MCA2 p. 242	Do Ex. L-M Do Block 1	
M	Area	p. 247	Do Ex. F	
M1	Area and Circumference	p. 247	Do Block 1	
M	Shaded areas	p. 248	Do Block 2 (top)	
M	Area and circumference	p. 249	Do Test 64, A, C, F, H	
M	Area	SWIM2 p. 220-221	Do What are Your Ideas 3 On Your Own 1-2	Refer to Activities for "Area Relay" which reviews Objectives 20 - 28.

OBJECTIVE 30: Using the three motions construct the following: (i) perpendicular bisector of a line; (ii) perpendicular from a point to a line; (iii) angle bisector; (iv) a parallel line through a given point, parallel to a given line.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
				Refer to Activities for "Geometry Bingo" for review of objectives.

OBJECTIVE 31: Using a straight edge and compass construct the following. (i) an equal segment; (ii) equal angle; (iii) a perpendicular bisector of a line; (iv) a perpendicular from a given point to a line and a perpendicular to a given point or line; (v) an angle bisector; (vi) a parall line through a given point, parallel to a given line; (vii) equilateral, isosceles and scalene triangles; (viii) angles of 90°, 45°, 60°, 30°, or a combination of the two; *(ix) triangles by SSS, SAS, ASA; *(x) "family of parallelograms.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Equal segment	CM2 p. 288-289	Read 1 - 3	
I	Equal angle	p. 290	Read 4	
I	Angle bisector	p. 291 p. 292-293 p. 306	Read 5 Do Ex. #6-8 #8	
I	Construction of triangles by SSS, SAS, ASA	p. 293-295 p. 296-297	Read 1 - 3 Do Ex. #4 - 6	
M		p. 305	#4	
I	Bisect a segment	p. 298-299 p. 300 p. 306	Read 1 - 3 Do Ex. #4 - 6 #5	
I	⊥ to a line at a given point	p. 301 p. 302 p. 306	Read 1 - 3 Do Ex. #4 - 6 #7	
I	⊥ to a line from a point not on the line	p. 302-303 p. 304 p. 306	Read 1 - 3 Do Ex. #4 #6	
I	Parallel lines	p. 333-335	Read 1 - 5 Do #6	
M	Various construction	p. 431	Do Ex. #6 11 - 16	

OBJECTIVE 31: Continued.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Congruent segments	MCA2 p. 152	Do A and B	
I	Congruent angles	p. 153	Do last of p. 152 and top of p. 153	
I	Bisecting segments	p. 154	Read Expertease	
I	Triangles by SSS	p. 163-164	Read and Do	
I	Triangle by SAS	p. 165	Read and Do	
I	Triangle by ASA	p. 166	Read and Do	
M	Construction by copying given information	p. 167	Do Block 2	
E	Proofs	p. 168	Do Expertease	
M	Various constructions	p. 190	Do Test 48, Omit D	Refer to Activities for "Twenty Questions" for review of all objectives

OBJECTIVE 32: *Describe stripe patterns by means of line symmetry.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES

OBJECTIVE 33: *Tile a plane.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES

OBJECTIVE A-1: Maintain previously developed skills: Computational skills and order of operations with wholes, fractionals, and decim number system properties, identity elements and zero proper

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
	Whole Numbers			
M	Identity and commutative	CM 2 p.74-75	Do Ex. 1-2 Read 3 - 5 Do Ex. 6	
M	Associative	p.76-77	Read 1 - 3 Do Ex. 4	
M	Distributive	p.77-81	Do Ex. 1, 3, 8, 11 Read 2, 4-7, 9, 10	
M	Closure	p.81-92	Read 1-3, 5 Do Ex. 4,6	
M	Addition	p.83	Do Ex. 2	
M	Conditions	p.84	Do Ex. 2	
M	Multiplication	p.86	Do Ex. 3	Competence in times tables helpful
M	Division	p.88	Do Ex. 4	
M	Zero Property	p.90-91	Read 1 - 7	Page 93 - note list of properties of whol numbers students have experienced.
M	Problems	p.95-97	Do Ex. 2	
	Fractions			
M	Meanings of a fraction	p.99-102	Read Read 1 - 3	
M	Equivalent fractions	p.103 p.104	Do Ex. 4 Read 5	
M	Comparing fractions	p.104	Read 1, 2 Do Ex. 3	
M	Addition	p.105 p.106	Read 1, 2 Do Ex. 3 Do Ex. 2 - 5	

OBJECTIVE A-1: Cont'd

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Subtraction	CM 2 p.107 p.108	Read 1, 2 Do Ex. 3 Do Ex. 5	
M	Problems	p.108-109	Do Ex. 1-17	
M	Multiplication	p.111 p.112	Read 1, 3-4 Do Ex. 2, 5-7	
M	Problems	p.112-113	Do Ex. 1-18	
M	Reciprocals	p.114	Read 1, 3, 4 Do Ex. 2,5	
M	Divide fractions	p.114-115	Read 1, 2, 3	
M	Division	p.115	Do Ex. 4	
M	Problems in multiplication and division	p.116	Do Ex. 1 - 10	
M	Various types of fraction problems	p.117-119	Do Ex. 1 - 26	
	Decimals			
M	Expanded form	p.120	Read 1, 2, 3 Do Ex. 4 - 5	
M	Converting fractions to decimals	p.121	Read 7 Do Ex. 8	
M	Addition and subtraction	p.121- p.122	Read 1, 3, 4, 5 Do Ex. 3, 6	
M	Multiplying	p.123-124	Read 1, 3, 4 Do Ex. 2, 5	
M	Multiplying by 10, 100, 1000	p.124-126	Read 1, 3, 4 Do Ex. 2,4,5,6	

OBJECTIVE A-1: Cont'd

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Division	p.127-128	Read 1, 2, 4 Do Ex. 3, 5	
M	Dividing using multiples of 10	p.129-130	Read 1 Do Ex. 2 - 5	
M	Fractions to decimals	p.131	Read 1 Do Ex. 2	
M	Fraction to repeating decimals	p.132-133	Read 1, 2, 3 Do Ex. 4	
M	Rounding off decimals	p.135-136	Read 1 - 3 Do Ex. 4	
M	Division	p.137	Read 1, 2 Do Ex. 3	
M	Problems	p.137-139	Do Ex. 1 - 20	
M	Division	p.141	Do Ex. 22	
M	Properties of fractions	CM 2 p.142-149	Read	
M	Conditions	p.146 p.148-149	Do Ex. 17, 20 Do Ex. 29, 32	
M	Equivalent fractions	p.150	Read 1, 2 Do Ex. 3	
	Condition $\frac{x}{A} = \frac{B}{C}$	p.152	Read 8 Do Ex. 9	
M	Conditions	p.154	Read 3 Do Ex. 4	
M	Problems	p.155	Do Ex. 5	
M	Graphing fractions	p.159	Read 1, 2 Do Ex. 3	

BJECTIVE A-1: Cont'd

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Conditions	p.160	Read 4 Do Ex. 5	
M	Fraction Numbers Review Exercise	p.422-426		
M	Reciprocals	MCA 2 p.43	Do Block 1	
M	Decimals and fractions	p.43	Do Block 2	
M	Division of decimals and fractions	p.49	Do Keeping Skillful	
M	Decimals, all operations	p.87	Do Keeping Skillful	
M	Rounding of decimals	p.93	Do Blocks 1 - 2	
M	Meaning of fractions, order equivalence	p.416-417 p.417	Read Do Blocks 1 - 2	
M	Addition and subtraction of fractions	p.418-420 p.421	Read Do Blocks 1 - 3	
M	Multiplication & reciprocals of fractions	p.422-423 p.424	Read Do Blocks 1 - 3	
M	Division of fractions	p.424-425 p.426	Read Do Blocks 1 - 2	
M	Addition and subtraction of decimals	p.427-428 p.428	Read Do Blocks 1 - 3	
M	Multiplication & division of decimals	p.429-430 p.430	Read Do Blocks 1 - 2	

OBJECTIVE A-1: Cont'd

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Operations	SWM 2 p.24,25	Do: Investigate - What are Your Ideas - On Your Own	
M	Computation exercise (wholes)	p.29	Do: On Your Own	
M	Finding the total	p.30, 31	Do: Investigate -What are Your Ideas -On Your Own	Addition exercise (wholes)
M	Finding the difference	p.32,33	Do:- Investigate - What are Your Ideas - On Your Own	Subtraction (wholes)
M	Different ways of multiplying	p.34,35	Do: - Investigate -What are Your Ideas -On Your Own	Multiplication (wholes)
M,E	Lattice Multiplication	p.36,37	Do: - Investigate - What are Your Ideas - On Your Own	Multiplication (wholes)
M,E	The IRO computer	p.38,39	Do - Investigate - What are Your Ideas - On Your Own	Multiplication (wholes)
E	Project Card	p.39	Do Project Card	
M	Finding Quotients	p.40,41	Do: - Investigate - What are Your Ideas - On Your Own	Division (wholes)
M	Checking Up	p.45	Do #1 - 4	Computation Review (Wholes)
M	Addition Exercise (wholes)	p.348-350	Do Sets 2 - 6	

BJECTIVE A-1: Cont'd

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Subtraction exercise (wholes)	p.351	Do Sets 8, 9	
M	Multiplication Exercise (wholes)	p.352-354	Do Sets 11 - 16	
M	Division Exercise (wholes)	p.355, 356, 366, 374	Do Sets 17-20 Sets 46,47 Set 64	
M	Fractions	p.76,77	Do: - Investigate -What are Your Ideas -On Your Own	Definitions of fractions
M	Equivalent fractions	p.78, 79	Do: - Investigate - What are Your Ideas - On Your Own	
M	Fractions in lowest terms	p.80,81	Do: - Investigate - What are Your Ideas - On Your Own	
M	Adding and subtracting fractional numbers	p.84,85	Do: - For You to Study - What are Your Ideas - On Your Own	
M	Adding Mixed Numbers	p.86,87	Do: - Investigate - What are Your Ideas - On Your Own	
M	Multiplication of fractions	p.88-91	Do: - Investigate - What are Your Ideas - On Your Own	

OBJECTIVE A-1: Cont'd

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Dividing fractional numbers	p.94,95	Do: - Investigate -What are Your Ideas -On Your Own	
M	Fraction exercises (equivalent fractions)	p.356, 357	Do Sets 21 - 23	
M	Addition and subtraction exercises (fractions)	p.357-359	Do Sets 24 - 29	
M	Multiplication exercises (fractions)	p.359-360	Do Sets 30-33	
M	Division Exercises (fractions)	p.361	Do Sets 34,35	
M	Decimals	p.98,99	Do - Study - What are Your Ideas - On Your Own	Definition of decimals
M	Comparing decimals	p.100, 101	Do: - Investigate - What are Your Ideas - On Your Own	
M	Adding decimals	p.102-103	Do: - Investigate - What are Your Ideas - On Your Own	
M	What is the difference	p.104, 105	Do: - What are Your Ideas - On Your Own	Subtraction of fractions
M	Multiplying decimals	p.108 109	Do: - Investigate - What are Your Ideas - On Your Own	

BJECTIVE A-1: Cont'd

ODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Addition and subtraction exercises (decimals)	p.361, 363	Do Sets 36-39	
M	Multiplication exercises (decimals)	p.364, 367	Do Sets 40, 41 Set 48	

JECTIVE A-2: Demonstrate the need for the integers. (eg. 5 - 7 = x)

DE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Reason for	CM 2 p.168	Read 1 - 2	
M	Using Temperature	p.184-185	Read 1 - 2 Do Ex. 3	
I	Closure	p.217-218	Read 1 - 6	
I	Meaning of Integers	MCA 2 p.8	Read A,B	
I	Assign numbers to statements	p.11	Do Block 1	
I	The System of Integers	EMM2 p.1 - 7	Read p.1-7	"additive inverse" approach used-develop number system

OBJECTIVE A-3: Develop Integers using whole numbers and directed segments.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Directed line segments	CM 2 p.169-176	Read 1 - 3 Do Ex. 4 - 9 Read 10 - 12 Do 13 - 17 Read 18 Do 19, 20 Read 21 Do 22, 23	
I	Use of directed numbers	p.177-178	Read 1-3, 5, 7 Do Ex. 4, 6, 8	
I	Introducing positive and negatives	p.179- 180	Read 1 - 4 Do Ex. 5, 7, 8	

OBJECTIVE A-4: Compare whole numbers and integers by plotting both sets on a number line.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Naming points and comparing with wholes	CM 2 p.181	Read 1 - 2	
		p.182	Do 3	
		p.183	Read 6 - 7	
M	Ordering	p.219	Read 1 - 2 Do Ex. 3	
I	Introduction	MCA 2 p.9	Read	
M	Plotting Integers	p.11	Do Blocks 3 - 4	
I	Positive and negative integers	EMM2 p.7-9	Read	
		p.7	Do Ex. 1.1	
		p.9	Do Ex. 1, 2, 3, 4	

BJECTIVE A-5: Demonstrate use of identity elements and zero property. (De-emphasize terminology.)

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Identity Element	CM2 p.215	Read 1 - 2	
I	Adding zero, multiplication of integers	EMM2 p. 12	Read	
		p.256	Read	

BJECTIVE A-6: State the addition inverse of any integer.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Opposites	CM2 p.184	Read 8	
I	Inverse operations	p.215	Read	
I	Definition	MCA2 p.13	Read right hand column Do J - T	

OBJECTIVE A-7: Perform the operations of addition with integers.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Addition	CM 2 p.182 p.183 p.186-190	Read 4 Do Ex. 5 Read 3 Do Ex. 2, 4-6 Read 7 Do Ex. 8, 10	
I	Using directed segments	MCA 2 p.12-13	Read A - C Do D - I	After I, note definition of additive inverse
M	Using absolute value	p.14	Read	
		p.14-15	Do Blocks 1, 3-4	
E	Rules for adding	p.15	Do Expertease	
I	Exercises	EMM2 p.14-18	Read	
		p.18-19	Do 1 -4, 5	

OBJECTIVE A-8: Apply the Difference Property in computation with integers. (eg. $5 - 7 = 5 + {}^{-}7$).

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Subtraction by changing to addition	CM 2 p.193-196	Read 3 - 5 Do Ex. 6 Read 7 - 8 Do Ex. 9 - 10	
I	Add opposite	p.196-197	Read 11 Do Ex. 12	
I	Subtraction by number line	p.191-193	Read 1 Do Ex. 2	
M	Addition and subtraction	p.197	Do Ex. a - x	
M	Subtraction	p.198	Do Ex. 2 - 3	
M	Addition and subtraction	p.198	Do Ex. 5	
I	Use of related equations	MCA 2 p.25-26	Read	
M	Practice	p.27	Do Blocks 1 - 3	
M	Addition and subtraction	p.29	Do: Keeping Skillful Block 1	
M	Practice	p.38	Do test 24	
M	Addition and subtraction	p.76	Do Block 4	
I	Subtraction	EMM2 p.23 p.24	Read Do 1 - 20	

OBJECTIVE A-9: Perform the operations of multiplication and division with integers.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Introduction to multiplying negative and positive integers	CM 2 p.201-204	Read 1 - 2 Do Ex. 3 - 4 Read 5 Do Ex. 6 - 8 Read 9 - 10	
I	Multiplying two negative integers	p.205-206	Do Ex. 1 - 7	
M	Operations of addition, subtraction and multiplication with integers	p.208	Do Ex. a - dd	
I	Division	p.209	Do Ex. 2 (do not change)	
		p.210	Read ex. 4	
		p.211	Do Ex. 5	
M	All four operations	p.211 p.426	Do Ex. 8 Review Exercises	
I	Multiplication with directed segments	MCA 2 p.16-17	Read to end of B Do C - G	
I	Rules using absolute value	p.17	Read	
M	Multiplication	p.18	Do Blocks 1 - 2	
E	Rules for multiplication	p.18	Do Expertease	
E	Application using lever and fulcrum	p.20-22	Read A - F Do Ex. A - H	
M	Sum and products	p.38	Do Test 23	
I	Muliplication of integers	EMM2 p.137-138 p.138	Read Do 1 - 8	

OBJECTIVE A-10: Evaluate integral expressions by using the properties to produce short cuts in computation. (De-emphasize terminology.)

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Integers are commutative associative for addition and multiplication	CM 2 p.212-213	Read 1 - 7	
I	Distributive	p.214	Read 8 Do Ex. 9	
M	Using the properties	p.216-217	Do Ex. 2, 4	
M	Properties	MCA 2 p.23	Read A - C Do Block 1 - 3	

OBJECTIVE A-11: Order integral expressions by using > , < , = .

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Order	EMM2 p.219	Read 1, 2 Do 3(a-r)	
I	Introduction	MCA 2 p.10	Read	
M	Practice	p.11	Do Blocks 5,6	
M	Practice	p.33	Do Keeping Skillful	
M	Practice	p.38	Do test 22	

OBJECTIVE A-12: Demonstrate the relationship between integers, whole numbers and fractionals using Venn diagrams.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES

OBJECTIVE B-1: Maintain previously developed skills: computation with fractional and decimal numerals.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
			See objective 4-A #1 for exercises	

OBJECTIVE B-2: Demonstrate the need for rational numbers (eg. $-5 \div 2 = x$, closure property.)

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Closure	CM2 p.217-218	Read	
I	Introduction	MCA 2 p.41-42	Read	
M	Assignment of numbers to statements	p.43	Do Block 2	
I	The system of rational numbers	EMM2 p.163-164	Read	Note different approach by the various authors.

OBJECTIVE B-3: Compare the rational numbers and integers using a number line.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Location of rationals on a number line	MCA 2 p.42	Read to end of D	
M	Plotting	p.43	Do Block 1	
M	Density	p.62	Do Keeping Skillful Read A - I	
I	Order and number line	EMM2 p.164-p.165	Read Do 4.1 Let's Explore	

OBJECTIVE B-4: Define rational numbers as the set of numbers which may be expressed in the form $\frac{a}{b}$ or as infinite repeating decimals.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES

OBJECTIVE B-5: Perform the operations of addition with rational numbers

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I,M	Addition using directed segments	MCA2 p.44-45	Read development	
		p.45	Do Blocks 1 - 2	
	Addition	p.190	Do test 47	
I,M	Addition and subtraction	EMM2 p.167	Read	
		p.168	Do Ex. 1, 2, 4	

OBJECTIVE B-6: State the additive inverse of any rational number.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Definition of additive inverse	MCA 2 p.44 p.45	Read development Do Block 3	
M	Practice	p.134	Do Block 2	
M	Define additive inverse	EMM2 p. 167	Read para. 1	
		p.168	Do Ex. 3 (a,b,c,d)	
		p.191	Do Ex. 1 (a,b,d,e)	

OBJECTIVE B-7: Apply the Difference property in computation with rational numbers.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I,M	Difference property and subtraction of rationals, and closure	MCA 2 p.50-51 p.51	Read development Do Ex. A-V Omit O,P,S.T.	
M	Practice	p.191	Do test 49(A-J)	
M	Subtraction	EMM2 p.169	Read development Do Ex. 1, 2, 4	

OBJECTIVE B-8: Perform the operation of multiplication with rational numbers.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Rules	MCA 2 p.46-47	Read to end of C	
M	Practice	p.47	Do Block 1	
E	Application	p.47	Do Block 2	
M	Addition and multiplication	p.190	Do test 47	
I	Multiplication	EMM2 p.170 p.171 p.174	Read development Do Let's Explore Do Ex. 1, 2(a-f)	

OBJECTIVE B-9: State the multiplicative inverse (reciprocal) of any rational number.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Reciprocals	MCA2 p.47		Teach with Objective 13 as all properties are covered within this section.
I	Definition	p.48		
M	Practice	p.76	Do Block 5	
I	Multiplicative Inverse and Division	EMM2 p.177 178	Read	
		p.179	Do Ex.1	
		p.180	Do Ex. 1,2	
		p.181	Do Ex. 3,4	
		p.184	Do Ex. 1,2	

OBJECTIVE B-10: Apply the quotient property in computation with rational number

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I,M	Application of quotient property, division of rationals	MCA2 p.52-54	Read development	
		p.52	Do C	
		p.53	Do D - O	
		p.55	Do A - V	
M	Practice with above	p.57	Do Block 2 (A - K)	
M	All operations	p.75	Do Test 27 (G - P)	
M	Exercises	EMM2 p.179	Do Ex. 2 (a - h) Let's Explore 1 (a - f)	

OBJECTIVE B-11: Identify 0 and 1 and the identity elements for addition and multiplication in the rationals. (De-emphasize terminology.)

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Definition	MCA 2 p.48	Read	Teach with objective 13 as this section deals with all the properties.

OBJECTIVE B-12: Convert fractions to decimals and decimals to fractions.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Repeating decimals for rational numbers	MCA 2 p.96-98	Read	
M	Practice	p.98 p.99	Do Block 2 Do Keeping Skillful B - I	
	Decimals to fractions	p.99	Do Expertease	
I	Naming fractions as decimal fractions	CM2 p.131	Read 1 Do 2(a - ℓ)	
		p.132	Read 1, 2, 3 Do 4 (a - o	
	Repeating decimals	p.425	Do 30 (i - vi)	

OBJECTIVE B-13: Evaluate expressions by using the properties to produce short cuts in computation. (De-emphasize terminology.)

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Definitions	MCA 2 p.48	Read	See objective B-11 this section
		p.49	Do Block 1, 2	
		p.51	Do Compute A - V	

OBJECTIVE B-14: Order rational expressions using > , < , =.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Order using number line	MCA 2 p.42	Read D - G Do E - J	
M	Selection of number to fit a given set	p.65	Do Block 1	
M	Practice	p.190	Do test 46	
I	Order and the number line	EMM2 p.164 p.165 p.206	Read Do 2 (a - j) Do Review Exercises 2(a - e)	

OBJECTIVE B-15: Demonstrate the relationship between rational numbers and other number systems. (eg. natural numbers, whole numbers, fractional numbers, integers).

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES

OBJECTIVE B-16: Evaluate expressions by substituting for the variables. (Limit: rational numbers).

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Evaluation of expressions	CM2 p.220	Do Ex. 1 (a - j) 2 (a - n)	
I,M	Number sentences	EMM2 p.31	Read	
		p.32	Do Let's Explore D 2,3	
I	Using rational numbers in expressions	MCA2 p.55 -56	Read	

OBJECTIVE B-17: Use the sum property, positive and negative multiplier property with rational expressions.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
		MCA 2		Included with references for objective 18

OBJECTIVE B-18: Solve conditions for equality and inequality. (Limit: a-d, rational numbers, e, f, g, h, integers)

a. $A + x = B$
b. $Ax = B$
c. $\frac{x}{a} = \frac{B}{c}$
d. $Ax + B = C$
e. $Ax + Bx = C$
f. $A(x + B) = C$
*g. $Ax = Bx +$
*h. $Ax + b = C$

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	$A + x = B$	CM 2 p.191	Do Ex. 3	
M	$A - x = B$	p.198	Do Ex. 4	
M	$Ax = B$	p.209	Do Ex. 3	
M	$A \div x = B$	p.211	Do Ex. 7	
M	$Ax + B = C$	p.221	Do Ex. 2	
I	Solving equations with properties for integers solutions	MCA 2 p.30-31	Read A - E	
		p.32	Do F - K	Includes objective 19
I	Evaluation of equivalent expressions	p.56	Read G - K	
M	Choose equivalent expressions	p.57	Do Blocks 1, 3	
I	Full use of properties for equations	p.59-61	Read	Good detail Includes objective 19
M	Practice	p.61-62	Do Blocks 1 - 2	
I	Full use of properties for inequalities	p.63-65	Read	Includes objectives 19 and 20
M	Practice	p.65	Do Blocks 2 - 3	
M	Practice	p.75	Do test 29	
M	Practice ($A + x = B$)	p.110	Do Block 1	$A + x = B$, $Ax = B$
M	Practice $A + x > B$	p.32-33	Do Blocks 1 - 3	

OBJECTIVE B-18: Cont'd

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Solving inequalities graphing and checking with integer solutions	p.34-37	Read	
M	Practice	p.37	Do Blocks 1 - 3	Includes objectives 19 and 20
M	Practice equation and inequations	p.38	Do Test 26	
M	$A + x = B$ $Ax = B$	p.115	Do Block 1, 3	
M	$\frac{x}{A} : : \frac{B}{C}$	p.124	Do Block 1	
M	$Ax = B$ $Ax + B = C$ $Ax + Bx = C$	p.134	Do Block 3	
M	$\frac{x}{A} : : \frac{B}{C}$	p.148	Do Block 3	
M	$Ax < B$	p.163	Do Block 3	
	$Ax + B > C$	p.193	Do Test 57	
	$A + x < B$	p.250 p.340	Do Block 1 Do Test 78	
M	Use reasoning to solve equations	SWM 2 p.178-179 p.182	Do For You to Discover On Your Own 1 - 6 Do On Your Own 1 - 5	
M	$A + x = B$ conditions	p.348 p.350 p.350	Do set 1 Do set 7 Do set 54	
M	$Ax = B$ conditions	p.370	Do set 55	

OBJECTIVE B-19: Verify solutions of conditions by substitution.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
				If you are using MCA this objective is covered in objective 18 references.

OBJECTIVE B-20: Graph the solution set for conditions on a number line. (Limit: rational numbers)

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Graphing	CM 2 p.224	Do Ex. 2 Do Ex. 3 (a - d)	
M	Graph on Number line	MCA 2 p.63-65 p.75	Read A - E Do Block 3 Do test 29	
M	Order and the number line	EMM2 p.164-166 p.167	Read Read examples 1, 2 Do a - e, g	

OBJECTIVE B-21: Write word problems from given mathematical statements.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES

OBJECTIVE B-22: Write mathematical statements from given word problems.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Introduction	CM 2 p.224-225	Read 1, 2 Do Ex. 3	Do not solve
M	Wordless problems	SWM 2 p.107	Do 1 - 3	
	Problems involving equations	MCA2 p.66-68	Read A - F	
		p.67	Do Prob. A - N	Do not solve
	Translation to number sentences	EMM2 p.372-375	Read	
		p.374	Do "Let's Explore" 1 - 4	
		p.375	Do Ex. 1 - 15	

OBJECTIVE B-23: Solve problems.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Adding and subtracting integers	CM 2 p.199-200	Do Ex. 1 - 7	
M	Multiplication of integers	p.207-208	Do Ex. 1 - 8	
M	Various operations	p.226-227	Do Ex. 5	
M	Integers	MCA 2 p.20-22 p.22	Read Do A - H	
M	Involving equations	p.66-67	Read	
M	Practice	p.67-68	Do A - N	
E		p.68	Do Expertease	
M	Involving inequalities	p.69-70	Read	
M	Practice	p.70	Do A - J	
M	Multiple - step	p.71 - 73	Read	
M	Practice	p.73-74	Do A - L	
E		p.74	Expertease	
M	Practice	p.75	Do test 30	
M	Practice	p.77	Do A - G	
M	Practice	p.94	Do A - L	
E	Sequence	p.120	Read	
E	Practice	p.120-122	Do A - F and Expertease	
M	Word Problems	SWM 2 p.26,27	Do Investigate What are Your Ideas On Your Own	

OBJECTIVE B-23: Cont'd.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Buying at the sale	SWM 2 p.42, 43	Do Investigate What are Your Ideas On Your Own	
M	Problems	p.106 p.181 p.182 p.273	Do 1 - 4 Do 1 - 6 Do 1 - 5 Do 1 - 8	
M	Solve problems	EMM2 p.377	Do Ex. 1 - 13	
	Too Little - Too Much Information	p.378	Do Ex. 1 - 5	

OBJECTIVE 1: Maintain previously developed skills and ideas: change fractions to an equivalent fraction whose denominator is 100. Express rate and ratios in the form $\frac{a}{b}$. Find the missing component.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Ratio: a:b	CM2 p. 237	Read 1 - 2 Do Exercise 3	
		p. 238	Read 4 - 5 Do Exercise 6 - 8	
M	Reducing Ratios	p. 239	Read 1 - 2 Do Exercise 3	
		p. 277	Do Exercise 4 - 5	
		p. 240	Read 4 - 5	
		p. 241	Do Exercise 6 - 8	
M	Distinction between ratios and rates	p. 256	Read "Rates"	
I	Rate pairs, solving proportions	MCA2 p. 433-5	Read Development Do Blocks 1, 2	Note: "Ratio" called "rate pair"

OBJECTIVE 2: Solve rate and ratio problems.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Ratio	CM2 p. 242-5	Read 1 - 2 Do Exercise 3	
I	Problems	MCA2 p. 436-7	Read Development	
		p. 437-8	Do A - K	
M	"Fraction of" problems	p. 438-440	Read Development	
		p. 440	Do A - N	

BJECTIVE 3: Convert fractions to percent.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Fractions as ratios to percents	CM2 p. 245-246	Read 1 - 4 Do Exercise 5, 6	
M	Fractions to percents	p. 247	Do Exercise 1	
M	Mixed fractions	p. 248	Read 2 Do Exercise 3	
		p. 252	Do Exercise 7	
M	Repeating fraction to percent	p. 252	Read 8 Do Exercise 9	
M	Practice	p. 277	Do Exercise 7, 8	
M	Rate, Ratio as a Percent	p. 6 MCA p. 443	Do Test 7 Do Block 1	
M	Practice	SWM2 p. 366	Do Set 45	

BJECTIVE 4: Convert percent to fractions.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Percent to fractions	CM2 p. 248	Do Exercise 4	
M	Percent to fractions and fractions to percent	p. 249	Read 7 Do Exercise 8	
M	Practice	SWM2 p. 365	Do Set 43	
M	Practice	SWM2 p. 365	Do Set 42	

OBJECTIVE 5: Convert decimals to percent.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Percents to fractions	CM2 p. 250	Read 1 Do Exercise 2	
M	Practice	SWM2 p. 365	Do Set 44	

OBJECTIVE 6: Convert percent to decimals.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Mixture of percent to decimals and decimals to percent	CM2 p. 251	Do Exercise 3, 5	
M	Repeating decimals	p. 251	Read 10 Do Exercise 11	
M	Relating fraction decimals and percent	MCA2 p. 444-445	Read Development	
		p. 446	Do Block 1	

OBJECTIVE 7: Solve percent problems.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M		CM2 p. 253-4	Read 1 - 4	
		p. 255	Do Exercise 5	
E	Profit	p. 256-7	Read 1, 2 Do Exercise 3	
E	Discount	p. 257	Read 4, 5	
		p. 258	Do Exercise 6	

OBJECTIVE 7: Continued.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
E	Commission	p. 258-9 p. 259	Read 7, 8 Do Exercise 9	
E	Tax	p. 260 p. 260	Read 10, 11 Do Exercise 12	
E	Insurance	p. 260-1	Read 13, 14 Do Exercise 15	
E	Interest	p. 262	Read 16, 17 Do Exercise 18	
E	Variety of problems	p. 263 p. 265	Do Exercise 19 Do Exercise 3	
E	Using graphs for comparison	p. 271-6	Read 1, 3, 4, 6 - 9 Do Exercise 2, 5, 10	
E	Practice	p. 278-9	Do Exercise 12 - 17	
M	Problems changing rate pairs to percent	MCA2 p. 441-3	Read Development Do Block 2	
M	Problems	p. 446	Do Block 2	
M	Multiple step problems	p. 447-8 p. 448-9	Read Development Do A - K	
M	Problems using P = rb	p. 234-5 p. 236	Read Development Do Block 2	
M	Multiple step problems involving formula	p. 237-8 p. 239	Read Development Do A - J	These involve other formulas also
M	Problems	SWM2 p. 110-1	Do Investigate What are Your Ideas On Your Own	

OBJECTIVE 1: Use the terms power, base, exponent, squared, cubed and to the n^{th} power.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Definitions of power, squared cubed	CM2 p. 51-53 p. 52	Study material Do Exercises 2, 3 (at top) and 1	
I	Chapter Test	p. 53	Do Exercise 1 - 5	
		p. 73	Do 6	
I	Definition	MCA2 p. 409-410	Read and study	
		p. 410	Do Exercise D	
M	Practice	p. 411	Do Blocks 2 - 4	
E		p. 411	Do Block 5	
I	Powers of Numbers	EMM2 p. 113	Read	
		p. 114	Do Exercise 1, 2	
M		p. 114-115	Do Let's Explore	

OBJECTIVE 2: Use exponential notation to write the expanded form of whole numerals and decimal numerals. (Limit: bases - whole numbers; exponents - whole numbers)

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Place value and expanded numerals	CM2 p. 59	Read Exercise 1 Do Exercise 2	
M		CM2 p. 227	Do Exercise 1, 2 Read Exercise 3	
		p. 228	Do Exercise 4	
I	Use of zero and one as exponents	p. 229	Do Exercise 8	
I	Expanded notation for all decimals	MCA 2 p. 86-87	Study the displays 1, 2, 3	
I	Expanded Numerals	EMM2 p. 130-131	Read	Very quickly goes beyond the above objective

ECTIVE 3: Write the values for powers. (Limit: bases-rational numbers; exponents-whole numbers)

ODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Evaluate powers	CM2 p. 162	Read 1 - 3 Do Exercise 4	
I	Positive integral powers	MCA2 p. 79-80	Read and study Exercise A - I	
		p. 80	Do Exercises B, C, D, E, F, G, H	
M	Practice	p. 81	Do Block 1	
M	Evaluate powers	EMM2 p. 186	Do Exercise 1	
M		p. 187	Do Exercises 1, 2	

ECTIVE 4: Express negative exponents in terms of positive exponents and find the values of the powers. (Limit: bases-rational numbers; exponents-integers)

DE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
	Negative integral powers and the zero power	MCA2 p. 82-83	Read and study.	
		p. 85	Do Block 1, A - L	
	Negative integral power	EMM2 p. 122	Read and do Exercises 1, 2	
		p. 124	Do Exercises 1, 2	
	Development of $a^x = \frac{1}{a^{-x}}$	p. 123	Do Let's Explore and read page	

OBJECTIVE 5: Write the expanded form of decimal numerals using negative exponents.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Introduction of negative powers of ten	CM2 p. 229-230	Study Exercise 9, 10 11 Do Exercise 12	
I	Expanded notation for all decimals	MCA2 p. 86	Read and do Exercises B,C,D,E Study displays 1-3	
M	Practice	P. 87	Do Blocks 1 and 2	
I	Expanded numerals	EMM2 p. 130-131	Read related material and do Exercises 1-8	

OBJECTIVE 6A: Simplify and evaluate expression using theproperty $3^a \times 3^b = 3^{a+b}$. (Limit: bases - rational numbers; exponents - integers

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Product Property-positive exponents	MCA2 p. 80	Read Exercises J,K Do Exercise J	
		p. 81	Do Block 1 - Exercises G, H, I, N Do Block 2 - Exercises A, G	
I	Product Property-negative exponents	p. 84	Read material related to Product Property Do Exercise D	
		p. 85	Block 1 - Exercises M, O, Q Block 2 - Exercises A, B, C, D, E, F, G, H, I	
I	Product Property-positive exponents	EMM2 p. 114-116	Read	Development work begins with 'Let's Explore' No. 12
M	Practice	p. 116	Do Exercises 1 - 20	
M	Product Property negative exponents	p. 126	Do Exercises 1 - a,b, c, h; 2 - a - e.	

JECTIVE 6B: Simplify and evaluate expressions using the property $3^a \div 3^b = 3\ a-b$. (Limit: bases-rational numbers; exponents-integers)

ODE	ITEM	RESOURCE		DIRECTION TO STUDENTS	TEACHER NOTES
I	Quotient Property	CM2	p. 228-229	Do Exercises 5, 6, 9	
I	Quotient Property	MCA2	p. 81	Read. Do Exercises L, M	
M	Practice - positive powers		p. 81	Do Block 1 - Exercises J, K, L, M	
			p. 81	Do Block 2 - Exercises C, D, E, F H, I, J, K, L, M	This exercises involves the product property
I	Negative Powers		p. 85	Read Do Exercises E, F	
M	Practice-integral exponents		p. 85	Do Block 1 - Exercises N,P,R,S	
				Do Block 2 - Exercises K - T	
			p. 133	Do Test 32, A,C,D, H, I	
	Quotient Property positive exponents	EMM2	p. 118-119	Do Let's Explore and read related material	
			p. 119	Do Exercise 1	
			p. 120	Do Exercise 3 - H, I, J, K, L, M, R	
			p. 120	Let's Explore - Do 1, 2	
			p. 126	Let's Explore - Do 1, 2, 3	

ECTIVE 6C: Simplify and evaluate expressions using the property $x^a + x^b$. (Limit: bases-rational numbers; exponents-integers)

DE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES

OBJECTIVE 6D: Simplify and evaluate expressions using the property $(3 \times 5)^a = 3^a \times 5^a$. (Limit: bases-rational numbers; exponents-integers)

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES

OBJECTIVE 7: *Write variables as bases with power properties.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Definition - product property	MCA2 p. 84	Note the property $a^m \times a^n = a^{m+n}$	
I	Definition - quotient property	p. 85	Note the property $a^m \div a^n = a^{m-n}$	
I	Definition - product property	EMM2 p. 126	Note the property $a^m \times a^n = a^{m+n}$	
M	Practice	p. 126	Do Exercises 2 - b, c,e,f,g,h,i,j	
I	Definition - quotient property	p. 129	Note the property $\frac{a^m}{a^n} = a^{m-n}$	
M	Practice	p. 130	Do Exercises 2 - e through n	
I	Definition - power of a power property	p. 139	Note the property $(a^x)^y = a^{xy}$	
M	Practice	p. 135	Do Exercises 8, 9 (at top)	
		p. 137	Do Exercise 1	
		p. 139	Do Exercises 11, 12, 20 - 26	

OBJECTIVE 8: Write the squares of numbers from one through twenty and estimate the square roots of numbers less than 400.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Finding square roots - whole numbers	CM2 p. 55	Read and do Exercises 1, 2, 3	
E	Pythagorean Theory	p. 56	Read Exercises 1, 2 Do 4 - 7	
I	Estimating square roots	p. 164-	Read and study 1 - 5	
M	Practice	p. 165	Do Exercise 6	
I	Determining square roots	MCA2 p. 104	Read Section 1 Do Exercises G, H, I	See page 143-144 of Teacher's Edition

OBJECTIVE 9: Use tables to find squares and square roots.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Use of tables	MCA2 p. 104-105	Read Section 2 Do Exercises J - T (black letters)	Note the use of the term "principal square root"
M	Reading Tables	p. 105	Do Exercises A - Y (yellow letters)	

OBJECTIVE 10: *Calculate square roots using an algorithm.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
	Squares and square roots	MCA2 - Teacher's Edition		See page 137. See page 143 for Newton's method of approximations- sometimes called "Average of Factors Method". Works well if pocket calculato is available.

OBJECTIVE 11: Write any standard numeral in scientific notation.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER
I	Development of scientific notation - positive powers	CM2 p. 130-131	Read and study 1 - 3 Do Exercise 4	
I	Use of negative powers	p. 230	Study Exercises 1-3, 5 Do Exercise 4	
M	Practice	p. 231 p. 233	Do Exercises 6, 7 Do Exercise 11 a - d	
I	Introduction to scientific notation	MCA2 p. 88-	Read material related displays 1 - 4 Do Exercises A - F	
M	Practice	p. 89 p. 90 p. 91	Do Exercises G - N Do Block 1, K - V Do Block 2, 3	
I	Multiplying and dividing by powers of ten	EMM2 p. 140-141	Do 'Let's Explore' 3 - 12, 3 - 13	
M	Practice	p. 142-143	Do Exercises 1 - 30	
I	Introduction to scientific notation	p. 143 p. 144-145	Read Do 'Let's Explore' 3 - 14, 3 - 15	
M	Practice	p. 146 p. 148 p. 148-149	Do Exercises 1 - 8 Do 'Let's Explore 3-16 Do Exercises 1, 2	

OBJECTIVE 12: Write any numeral in standard form given scientific notation.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Practice	MCA2 p. 90 p. 91 p. 92	Block 1, A - J Block 2 Do Test 34	

TEXT REFERENCES

LEVEL 9

OF ALBERTA LIBRARY

OBJECTIVE 1: Maintain previously developed skills: Computation with rational numbers, convert fractions to decimals and decimals to fractions, application of properties (associative, commutative, distributive, additive inverse, multiplicative inverse, difference property, quotient property, zero property, identity elements, closure property), evaluate expressions, order of expressions, percent.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Addition and use of properties (whole)	CM3 p. 8-10	Study Sec. 1 - 4 Do Ex. 1 - 3, 1 - 6	Review application of properties (associative, commutative, and distributive) to simplification of calculations.
M	Multiplication & use of properties (whole)	p. 10-15	Study Sec. 1 - 5 Do Ex. 1 - 4, 1 - 17	
M	Identity Elements & closure (whole)	p. 15-18	Study Sec. 1 - 6 1 - 7 Do Ex. 1 - 5 1 - 16	
M	Addition (Integers	p. 25-27	Study Sec. 2 - 2 Do Ex. 2 - 2, 1 - 9	
M	Subtraction and difference property (Integers)	p. 27-30	Study Sec. 2 - 3 Do Ex. 2 - 3 1 - 8	
M	Multiplication (Integers)	p. 31-33	Study Sec. 2 - 4 Do Ex. 2 - 4 1 - 4	
M	Division (Integers)	p. 34-35	Study Sec. 2 - 5 Do Ex. 2 - 5 1 - 6	
M	Order of Operations (Integers)	p. 35-39	Study Sec. 2 - 6 Do Ex. 2 - 6 1 - 33	See p. 13-14

OBJECTIVE 1: Continued

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Review Exercise (Integers)	p. 45-46	Do Ex. 2 1 - 38 Omit #4, 14, 15, 16, 31, 35, 36, 37	
M	Evaluate Expressions (Rationals)	p. 49	Do Ex. 3 - 1 #3 a - p	
M	Equivalent Rational Numbers	CM3 p. 50	Do Ex. 3 - 1 4 - 13, 20, 21	
M	Multiplication of Rational Numbers	p. 51-53	Study Sec. 3 - 2 Do Ex. 3 - 2 1 - 25	Note idea re: identity element of multiplication
M	Equivalent Rational Numbers	p. 54-57	Study Sec. 3 - 3 Do Ex. 3 - 3 1 - 16, 20	
M	Division of Rational Numbers	p. 61-64	Study Sec. 3 - 5 Do Ex. 3 - 5 1 - 28	
M	Addition and Subtraction of Rational Numbers as Fractions	p. 64-68	Study Sec. 3 - 6 Omit Ex. #2 Do Ex. 3 - 6 1 - 26	
M	Conversion -Fractions to Decimals -Decimals to Fractions	p. 69-71	Study Sec. 3 - 7 Do Ex. 3 - 7 1 - 30	Note: convert by division process not shown - see p. 75
M	Addition and Subtraction of Rational Numbers as Decimals	p. 72	Do Ex. 3 - 7 31 - 35	
M	Multiplication & Division of Rational Numbers as Decimals	p. 72-75	Study Sec. 3 - 8 Do Ex. 3 - 8 1 - 24	Significant digit exercise included

OBJECTIVE 1: Continued

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Convert fractions to decimals	p. 75-78	Study Sec. 3 - 9 Do Ex. 3 - 9, 1 - 22	See paragraph top page 77 for possible reminders
M	Order of Rational Numbers	CM3 p. 80-83	Study p. 80, Fig. 3-1 3-2 Do Ex. 3 - 11 1 - 13	
M	Density	p. 81-83	Study Sec. 3 - 11 Do Ex. 3 - 11, 14-20	
M	Review Exercise	p. 85-86	Do Ex. 3A #1a-e, 3, 5 - 28, 32 - 41, 44, 45, 48	
M	Review Exercise	p. 87	Do Ex. 3b, 1 - 22	
M	Operations with Whole Numbers	EA p. 19	Do 'Keeping Skillful' 1 - 22	
M	Evaluation of Expressions	p. 19	Do 'Keeping Skillful' 23 - 32	
M	Fractions to Mixed	p. 19	Do 'Keeping Skillful' 33 - 40	
M	Decimals to Fractions	p. 19	Do 'Keeping Skillful' 41 - 52	
M	Operations with Positive Rationals	p. 35	Do 'Keeping Skillful' 1 - 49	
M	Order of Rationals	p. 35	Do 'Keeping Skillful' 50 - 57	
I	Addition of Integers	p. 36-37 p. 38-39	Read Do questions and exercises	

OBJECTIVE 1: Continued

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Evaluation	p. 40	Do 41 - 43	
M	Problems with addition of integers	EA p. 40	Do 44 - 49	
M	Properties	p. 45	Do 11 - 23	
I	Subtraction of rationals	p. 46-48	Read	
M	Subtraction of rationals	p. 49	Do 1 - 41	
I	Additive inverse and subtraction	p. 50-51	Read	
M	Subtraction of rationals	p. 52	Do Ex. 1 - 30	
I	Multiplication of rationals	p. 53-57 p. 58	Read Do Ex. 1 - 42	
I	Division of rationals	p. 63-64 p. 64-65	Read Do Ex. 1 - 17	
M	Operations with rationals	p. 65-66	Do 'Keeping Skillful'	
M	Operations and properties	p. 68-69	Do Chapter Review	
I	Order of operations	p. 71-74 p. 74	Read Do Ex. 1 - 25	
M	Power properties with constant base	p. 79-80 p. 81 p. 87	Read Do Ex. 1 - 26 Do Ex. 42 - 51	

OBJECTIVE 1: Continued

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Operations with rationals	p. 86-87	Do 'Keeping Skillful' #6 - 41	
M	Order of Operations	EA p. 117	Do 'Keeping Skillful' #25 - 39	
M	Reduction of fractions	p. 117	Do 'Keeping Skillful' #40 - 51	
M	Operations with rationals	p. 223	Do 'Keeping Skillful' #13 - 40	
M	Operations with rationals	p. 277	Do 'Keeping Skillful' #19 - 36	
M	Fractions to decimals	p. 391	Do 'Keeping Skillful' #9 - 20	
		p. 471	#1 - 15	
M	Order rationals	p. 391	Do 'Keeping Skillful' #39 - 42	
		p. 471	#16 - 19	
I	Short-cuts with fractions	SWM3 p. 246	Do 'For You to Discover' & #1 - 4	
I	Practice	p. 247	Do 'On Your Own' #1 - 4	
I	Short-cuts for multiplying with decimals	p. 248	Do 'For You to Discover' & #1 - 4	
I	Practice	p. 249	Do 'On Your Own' #1 - 4 and Mini Check Exercise	
M	Review	p. 250	Do #1 - 7	
I	Using flow charts in computation	p. 5	Do 'On Your Own' #1 - 3	
		p. 6	Do 'For You to Investigate' & #1, 2	

OBJECTIVE 1: Continued

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Using flow charts in computation	SWM3 p. 7	Do 'On Your Own' #1, 2	
I	Using flow charts for short-cuts in computation	p. 12 p. 13	Do 'For You to Investigate' and #1,2 Do 'On Your Own' #1 - 3	
E	Making an addition nomograph	p. 13	Do Project Card #5	
I	Computation practice	p. 14	Do 'Change of Pace'	
I	Review	p. 15	Do #1 - 4	
I	Multiplying using your fingers	p. 28	Do 'Change of Pace'	
I	Addition and multiplication table	p. 39	Do Project Card #14	
I	Practice	p. 41	Do #1 - 4	
I	Cross-number puzzle	p. 57	Do puzzle	
I	Order of Operations	p. 58	Do 'For You to Discover' & #1 - 3	
I	Practice	p. 59	Do 'On Your Own' #1, 2	
I	Game	p. 77	Do 'Low Score Wins'	
I	Addition of Integers	p. 78	Do 'For You to Investigate' and #1 - 3	
I	Practice	SWM3 p. 79	Do 'On Your Own' #1, 2	

OBJECTIVE 1: Continued

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Making up addition rules	p. 79	Do Project Card #22	
I	Using a number line to add and subtract integers	p. 80	Do 'For You to Study' and #1, 2	
I	Practice	p. 81	Do 'On Your Own' #1, 2	
I	Practice	p. 374	Do Set 8	
I	Multiplying integers	p. 82	Do 'For You to Investigate' and #1, 2	
I	Practice	p. 83	Do 'On Your Own' #1 - 3	
I	Practice	p. 375	Do Set 9	
I	Review	p. 84	Do #1 - 6	
I	Game	p. 95	Play Target Game	
I	How fractions are used	p. 106	Do 'For You to Investigate' and #1 - 7	
I	Practice	p. 107	Do 'On Your Own' #1 - 3	
I	Lowest terms	p. 108	Do 'Do For You to Investigate' and #1 - 4	
I	Practice	p. 109	Do 'On Your Own' #1, 2	
I	Addition and subtraction of fractions	SWM3 p. 110	Do 'For You to Investigate' and #1 - 4	

OBJECTIVE 1 - Continued

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Practice	p. 111	Do 'On Your Own' #1 - 4	
I	Equivalent fractions	p. 114	Do 'For You to Discover' and #1 - 3	
I	Practice	p. 115	Do 'On Your Own' #1 - 4	
I	Practice	p. 378-379	Do Sets 18, 19	
I	Adding and subtracting mixed numerals	p. 116	Do 'For You to Investigate' and #1 - 4	
I	Application of fractions	p. 117	Do 'On Your Own' #1 - 5	
M	Practice	p. 379-380	Do Sets 20 - 22	
I	Multiplying and dividing fractions	p. 120	Do 'For You to Discover' and #1 - 4	
I	Practice	p. 121	Do 'On Your Own' #1 - 4	
M	Practice	p. 381-382	Do Sets 23 - 26	
I	Review	p. 128	Do #1 - 5	
I	Review	p. 129	Do #1 - 3	
I	Practice	p. 139	Do Mini Check #1 - 4	
I	Practice	SWM3 p. 149	Do #1 - 5	
I	Practice	p. 163	Do Mini Check #1 - 5	
I	Meaning of decimals	p. 178	Do 'For You to Investigate' and #1 - 3	

OBJECTIVE 1: Continued

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Practice	p. 179	Do 'On Your Own' #1 - 4 and Project Card #43	
M	Ordering decimals	p. 182	Do 'For You to Study' and #1 - 2	
M	Practice	p. 183	Do 'On Your Own' #1, 2	
I	Adding and subtracting decimals	p. 184	Do 'An Activity for You' and #1, 2	
I	Practice	p. 185	Do 'On Your Own' #1, 2	
I	Round decimals	p. 186- p. 187	Do 'For You to Discover' Do 'On Your Own' #1 - 3	
I	Practice	p. 383	Do Set 29	
I	Decimal products	p. 190	Do 'For You to Discover' and #1 - 3	
I	Practice	p. 191	Do 'On Your Own' #1, 2	
I	Multiplying decimals	p. 192	Do 'For You to Investigate' and #1, 2, 3	
I	Practice	p. 193	Do 'On Your Own' #1	
I	Changing fractions to decimals	SWM3 p. 194	Do 'An Activity for You' and #1, 2	
I	Practice	p. 195	Do 'On Your Own' #1 - 4	
I	Addition	p. 230	Do 'For You to Investigate' and #1 - 4	

OBJECTIVE 1: Continued

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Practice	p. 231	Do 'On Your Own'-all	
I	Practice	p. 388-389	Do Sets 38 - 41	
I	Subtraction	p. 232	Do 'For You to Investigate' and #1-4	
I	Practice	p. 233	Do 'On Your Own'-all	
E	Digital Sums	p. 234-235	Do all exercises	Basic to "Casting Out Nines" Check on number of operations
I	Multiplying	p. 236	Do 'For You to Investigate' and #1 - 5	
I	Practice	p. 237	Do 'On Your Own' #1 - 3	If sufficient time, may be worthwhile to introduce various "short-cuts".
I	Review multiplying	p. 238	Do 'For You to Investigate' and #1 - 4	
I	Practice	p. 239	Do 'On Your Own' #1 - 4	
E	Multiplication	SWM3 p. 241	Do 'Russian Peasant Multiplication'	
I	Review dividing	p. 242	Do 'For You to Discover' and #1 - 5	
I	Practice	p. 243	Do 'On Your Own' #1 - 4 and Project Card #60	

OBJECTIVE 2: *Convert repeating decimals to fractions.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Practice	CM3 p. 78-79	Study Sec. 3 - 10 Do Ex. 3 - 10 1 - 28	Exercise contains review of terminating decimals. Do include a number of simple items - e.g. $0.\overline{15}$, $0.1\overline{5}$ etc.
M	Repeating to fractions	EA p. 390 p. 391	Read Do Ex. 1 - 42	
I	Repeating decimals	SWM3 p. 195	Do Project Card #47	

OBJECTIVE 3: Solve and verify conditions for equality and inequality.

(a) $A + x = B$ (b) $Ax = B$ (c) $Ax + B = C$ (d) $\frac{x}{A} = \frac{B}{C}$

(e) $A(x + B) = C$ (f) $Ax + Bx = C$ (g) $Ax + B = Cx + d$

*(h) $A(x + B) + Cx = D$ *(i) $A(x + B) + C(x + D) = E$

*(j) $\frac{x + A}{B} = \frac{x + C}{D}$ *(k) $\frac{A}{B}x + \frac{C}{D} = E$ *(l) $A(x + B) = C(x$

NOTE: Emphasis should be placed on conditions of type (a) - (g).

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Conditions (whole)	CM3 p. 4	Do Ex. 1 - 1 1 & 4	
M	Conditions (whole)	p. 7	Do Ex. 1 - 2 1, 2, & 3	
M	Conditions (integers)	p. 44	Do Ex. 2 - 8 13 - 20	
M	Conditions (rationals)	p. 58-60	Do Ex. 3 - 4 1 - 47	$Ax = B$ Review
M	Solve conditions Use equivalent equations	p. 101-106	Study Sec. 5 - 1 Do Ex. 5 - 1 #1 - 5	-Review properties of rational numbers used -Review types a - g
I	Solve conditions	p. 106-111 p. 109-110	Study Sec. 5 - 2 Do Ex. 5 - 2 #1 - 32	$\frac{A}{B}x + \frac{C}{D} = E$ -Ex. 33 - 41 may be used as enrichment
M	Solve inequalities	p. 111-116 p. 115-116	Study Sec. 5 - 3 Do Ex. 5 - 3, #1 - 25	-Entered under Unit IV, Obj. 8, for graphs
M	Review exercise	p. 136-137	Do Review Ex. #5 1 - 11, 25 - 34	
I	Statements and conditions	EA p. 95-97 p. 97-98	Read Do Ex. 1 - 26	
I	Equivalent conditions	p. 98-100	Read	

OBJECTIVE 3: Continued

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	A + x = B Ax = B	p. 101	Do Ex. 1 - 41	
I	Solving equations	EA p. 103-106	Read	
M	A + x = B, Ax = B	p. 106-107	Do Ex. 1 - 26	
I	Ax + B = C	p. 107-109	Read	
M	Ax + B = C Most difficult	p. 109-110	Do Ex. 1 - 32	
I	Clearing equations of fractions and decimals	p. 110-111	Read	
I	Distributive property	p. 112	Read	
M	Simplification & distributive property	p. 113	Do Ex. 1 - 30	
I	Simple conditions	p. 117	Do 'Keeping Skillful' 1 - 24	
M	Techniques for various conditions	p. 121-122	Do Chapter Review 1 - 24	
M	Solutions by substitution	p. 127-128 p. 131	Read Do Ex. 1 - 10	
M	Sum property for inequalities A + x > B	p. 132-134 p. 134	Read Do Ex. 1 - 10	
M	Multiplier properties	p. 135-138	Read	

OBJECTIVE 3: Continued

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Using the above properties	p. 139	Do Ex 1 - 15	
M	Solving inequality	p. 139	Do Ex. 16 - 37	
M	Solving simple equations	EA p. 144	Do Ex. 25 - 40	
M	Simple conditions	p. 277	Do 'Keeping Skillful' #1 - 12	
M	Advanced conditions	p. 433	Do 'Keeping Skillful' #1 - 9	
I	Use flow charts in algebra	SWM3 p. 8	Do 'For You to Investigate' and #1, 2	
I	Practice	p. 9	Do 'On Your Own' #1 - 3 and Project Card #3	
I	Finding the missing number	p. 48	Do 'For You to Investigate' and #1, 2	
I	Practice	p. 49	Do 'On Your Own' #1, 2	
I	Solving equations	p. 50	Do 'For You to Study' and #1 - 4	
I	Practice	p. 51	Do 'On Your Own' #1, 2	
I	Practice	p. 372	Do Set 3	
`I	Practice making equations with cards	p. 52	Do 'For You to Investigate' and #1 - 3	

OBJECTIVE 3: Continued

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Practice	p. 53	Do 'On Your Own' #1 - 4	
I	Combining operations in equations	SWM3 p. 54	Do 'For You to Investigate' and #1 - 3	
I	Practice	p. 55	Do 'On Your Own' #1 - 3	
I	Practice	p. 372	Do Set 4	
I	Using flow charts to solve equations	p. 60	Do 'For You to Investigate' and #1 - 5	
I	Practice	p. 61	Do 'On Your Own' #1 - 3	
M	Practice	p. 373	Do Set 5	
I	Solving equations with two operations	p. 62	Do 'For You to Investigate' and #1 - 6	
I	Practice	p. 63	Do 'On Your Own' #1, 2	
M	Solving equations	p. 64	Do 'For You to Study' and #1 - 4	
M	Practice	p. 65	Do 'On Your Own' #1, 2	
M	Practice	p. 373	Do Set 6'	
I	Review	p. 66	Do #1 - 3	
I	Practice	p. 67	Do #1, 2	
I	Numbers less than zero Activity	p. 70	Do 'For You to Investigate' and #1 - 4	

OBJECTIVE 3: Continued

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Practice	SWM3 p. 71	Do 'On Your Own' #1 - 3	
I	Activity	p. 72	Do 'An Activity for You' and #1 - 5	
I	Practice	p. 73	Do 'On Your Own' #1, 2	
I	Game	p. 73	Do Project Card #20	
I	Negative numbers	p. 74	Do 'For You to Study' and #1 - 3	
I	Practice	p. 75	Do 'On Your Own' #1 - 3	
M	Review	p. 77	Do 'Mini Check' #1, 2	
I	Review	p. 87	Do #4	
I	Review	p. 103	Do #1 - 5	
I	Practice	p. 109	Do 'On Your Own #3	
I	Review	p. 117	Do 'Mini Check'	
I	Game	p. 139	Equations Game	
I	$\frac{x}{a} = \frac{b}{c}$ conditions	p. 149	Do #6	
M	Solving equations	p. 199	Do #3	
M	Review	p. 221	Do 'Mini Check'	
I	Review	p. 227	Do #1 - 6	
M	Review	p. 251	Do #1 - 7	-Includes problems for Obj. 1 -Reviews other obj.

OBJECTIVE 4: Graph the solution set for inequalities on a number line.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Graph solution sets	CM3 p. 113-116	Study Sec. 5 - 3 eg. 2 - 5 Do Ex. 5 - 3 #11 - 18	-Entered under Unit IV, Obj. 6 for solutions
M	Review exercises	p. 138	Do #35 - 39	
I	Graphing	EA p. 129-130 p. 131	Read Do Ex. 11 - 30	-The use of curved lines rather than the open and closed circles is recommended
N	Graphing of inequalities $A + x > B$	p. 135	Do Ex. 11 - 23	
M	Given possible solution set choose the right answers	p. 144	Do 'Keeping Skillful' #1 - 24	

OBJECTIVE 5: Write word problems from given mathematical statements.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES

OBJECTIVE 6: Write mathematical statements for given word problems.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTE
M	Practice (Integers)	CM3 p. 42-44	Study Sec. 2 - 8 Do Ex. 2 - 8, #1-7	
M	Practice	p. 122-125	Study Sec. 5 - 6 Do Ex. 5 - 6, #1-14	
M	Review exercise	p. 137	Do Ex. 5, #20-24	
I	Translation	EA p. 82-84	Read	
		p. 85-86	Do Ex. 1 - 36	
I	Making up word problems	SWM3 p. 98	Do 'For You to Investigate' and #1, 2	
I	Practice	p. 99	Do 'On Your Own' #1 - 4	
I	Practice	p. 193	Do 'On Your Own' #2	

BJECTIVE 7(a): Solve problems which require the use of a formula, ($d = rt$, $c = np$, $a = \frac{t}{n}$, $s = c + o + p$, $i = prt$

(b): Solve a variety of problems using a condition in which only one variable is involved.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Practice (Integers)	CM3 p. 44	Do Ex. 2 - 8 #8 - 12	
M	Practice	p. 125-126	Do #15 - 27	Note specific steps in "problem solution" on p. 123
E	Historical problems	p. 134-135	Do Ex. 5 - 11 #1 - 13	
M	Review exercise	p. 138-9	Do #49 - 52	
M	Problems	p. 121	Do Ex. 5 - 5 #13 - 16, 23, 24, 25	Do not assign change of subject exercises except as enrichment
M	Investment problems	p. 126-127	Study Sec. 5 - 7 Do Ex. 5 - 7 #1 - 12	
M	Mixture problems	p. 128-129	Study Sec. 5 - 8 Do Ex. 5 - 8 #1 - 13	
M	Travel problems	p. 129-131	Study Sec. 5 - 9 Do Ex. 5 - 9 #1 - 16	
M	Work problems	p. 132-133	Study Sec. 5 - 10 Do Ex. 5 - 10 #1 - 12	
M	Review exercise	p. 138-139	Do #53 - 63	
M	Problems that involve equations	EA p. 113-115 p. 116-117	Read Do Ex. 1 - 20	Note specific steps in "problem solution" on p. 115

OBJECTIVE 7: Continued

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Problems	p. 122-123	Do #25 - 30	
M	Problems that involve inequalities	p. 141-142	Read	
M	Practice	p. 143-144	Do Ex. 1 - 13	
M	Type Problems	p. 162-163	Do Ex. 1 - 20	
M	Percent and geometric	p. 347-348	Do 'Keeping Skillful' #1 - 14	
I	Identifying which operation to use	SWM3 p. 88	Do 'For You to Investigate' and #1, 2	
I	Practice	p. 89	Do 'On Your Own' #1, 2	
I	Writing equations to solve problems	p. 90	Do 'For You to Discover' and #1 - 3	
I	Practice	p. 91	Do 'On Your Own' #1 - 10	
I	Incomplete problems	p. 96	Do 'For You to Investigate' and #1 - 3	
I	Practice	p. 97	Do 'On Your Own' #1, 2	
I	Finding the hidden number	p. 44	Do 'An Activity for You' and #1 - 3	
I	Practice	p. 45	Do 'On Your Own' #1, 2	

OBJECTIVE 7: Continued

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Finding the unknown weight	p. 46	Do 'For You to Investigate' and #1-3	
I	Practice	p. 47	Do 'On Your Own' #1, 2 and Project Card #16	
I	Problem solving	SWM3 p. 91	Do Project Card #24	
I	Problem solving	p. 92	Do 'For You to Investigate' and #1, 2	
I	Practice	p. 93	Do 'On Your Own' #1, 2	
I	Solving problems	p. 100	Do #2, 3, 4, 6, 9	
I	Problems about you	p. 101	Do #1 - 7	
I	Review problem solving	p. 102	Do #1 - 3	
I	Using proportions in problem solving	p. 126-127	Do problems .	
I	Estimating	p. 146	Do 'For You to Investigate' and #1 - 4	
I	Car Insurance	p. 284 p. 285	Do #1 - 5 Do #1 - 4	
I	Cost Problems	p. 286	Do 'For You to Investigate' and #1 - 3	
I	Practice	p. 287	Do 'On Your Own' #1 - 7	
I	Discount Problems	p. 294	Do 'For You to Discover' and #1 - 4	

OBJECTIVE 7: Continued

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Practice	p. 295	Do 'On Your Own' #1 - 5	
I	Finding averages	SWM3 p. 244	Do 'For You to Investigate' and #1 - 5	
I	Practice	p. 245	Do 'On Your Own' and Project Card #61	
I	I = prt Problems	p. 278	Do 'For You to Discover' and #1 - 3	
M	Practice	p. 279	Do 'On Your Own' #1 - 4	
M	Loan Problems	p. 282	Do 'For You to Discover' and #1 - 4	
M	Practice	p. 283	Do 'On Your Own' #1 - 3	
M	Review	p. 298	Do #1 - 7	Exercise contains a mixture of percent problems
M	Finding averages	p. 324	Do 'For You to Discover' and #1 - 3	
		p. 325	Do 'On Your Own' #1 - 3 and Project Card #75	
M	Review	p. 345	Do #6	

OBJECTIVE 1: Maintain previously developed skills and ideas: classification of polygons, triangles, quadrilaterals, etc. - congruent triangles and constructions.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Polygon review	CM3 p.305-7	Study Sec. 10-12	
M	Triangle review	p.308-9	Study Sec. 10-13	
M	Classification of quadrilaterals	p.310	Study Sec. 10-15	
M	Polygon Exercise	p.311-12	Do Ex. 10-4, 1-20	
M	Construction review	p.313-22	Read p.313-22 Do Construction 1-7	
M	Construction (S,S,S)	p.328	Do Construction 8	
M	Construction (S,A,S)	p.329	Do Construction 9	
M	Construction (A,S,A)	p.330	Do Construction 10	
M	Congruent triangles	p.353-59	Read p.353-59 Do Experiments 6 - 10	
E	Symmetry of polygons	SWM3 p.158-9 p.159	Read Do #1, 2, 3.	

OBJECTIVE 2: Maintain previously developed skills and ideas: SI linear measure, SI area measure, express units in corresponding SI equivalents; perimeter and area formulas, problem solving.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
		See Grade VIII	Geometry Unit	
ALSO	Area Polygonal Region	CM3 p.364-73	Read	
	SI units length	SWM3 p.180	Read "What are Your Ideas?"	
		p.181	Do 1, 2.	
M	Perimeters	SWM3 p.204-7	Read and do	Assign problems that use SI units or no units and convert others to suitable units
M	Circumference	p.208-9	Read and do	
M	Area of Rectangle	p.212-13	Read and do	
M	Area problems	p.215	Do	
M	Area of Triangle	p.216-7	Read and do	
M	Area of Circle	p.218-19	Read and do	
M	Area problems	p.256-7	Do	

OBJECTIVE 3: Label triangles by using opposite vertices.
4: Demonstrate knowledge of the hypotenuse by labelling a triangl with a, b, and c where c stands for the hypotenuse.
5: State the Pythagorean Property
6: State the formula $c^2=a^2 + b^2$ for the Pythagorean Property

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Law of Right Triangle	CM3 p.323-25	Read	
M	Let's Explore	EMM3 p.94-97	Do 1 - 4	
M	Pythagorean Property	MCA2 p.169	Read	Note definition for hypotenuse under display 1, p.169.

OBJECTIVE 6: continued

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Develop Pythagorean formula	CM2 p.319-324	Read p. 319-24 Do Ex. 1 - 8	Use exercises in class discussion or individually.
M	Review	CM3 p.323	Read	
M	Proof of $a^2 + b^2 = c^2$	p.324	Read	
		p.325	Do Ex. 1,2	
M	Hypotenuse and Pythagorean Property	MCA2 p.169-170	Read A, B	Do as class discussion or individual assignment
E	Triads	p.189	Read and do A - J	
M	Pythagorean Property of Right Triangles	EMM3 p.93-97	Read	#5 and 6 refer to Pythagorean Triples
		p.98	Do Ex. 1 - 8	

OBJECTIVE 7: *Determine which sets consisting of three elements are Pythagorean triads.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES

OBJECTIVE 8: Use the Pythagorean Property to solve problems given diagrams and word problems.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Use of Pythagorean formulas	CM2 p.324-5	Do Ex. 9 - 14	
M	Examples of formula use	CM3 p.325	Read Ex. 1 & 2	Note: None of these are in SI units.
M	Problems	p.326	Do Ex. 3 - 12	Tables of square roots would be helpful.
E		p.327	Do Ex. 13 - 15	More difficult
		p.389	Do Ex. 9, 11, 14, 15, 16, 19	
M	Examples	MCA2 p.170-1	Read and do C-J	
M	Pythagorean Property	p.172-3	Do Blocks 1 - 5	Assign selected problems
M		EMM3 p.388-9	Read	
		p.389	Ex. 1 - 11	
		p.404	10	
E		p.439	8	

OBJECTIVE 9: Construct inscribed regular polygons.
(Limit: triangle, square, hexagon, octagon, *pentagon.)

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Inscribed square, hexagon, octagon	MCA2 p.245		Do expertease as a demonstration.
M	Inscribed polygons	STM3 p.54-57		Use this as reference; difficult for students to read on own
		p.58	Do # 1 - 11	

OBJECTIVE 10: Develop the formula $A = \frac{1}{2}ans$ for finding the area of regular polygons, and use the formula to solve problems.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Alternate formula $A = \frac{1}{2}ap$ developed	MCA2 p.243-4	Read p.243-244	Use as a class discussion. Note definition of apothem
M	Area	p.245	Do Blocks 1, 2	
M	Area of polygon	STM3 p.78-80		Use this as reference only; difficult for students to read on their own. $A = \frac{1}{2}ap$ also given
M		p.82	Do #6 - 8	
		p.84-85	Do Ap. Math #2,4,5,7,8,10,11, 14 and 15.	

OBJECTIVE 11: Select the correct description of prisms, right pyramids and other polyhedra.

12: Identify edges, faces, lateral faces, bases, apex, height an slant height for right prisms and right regular pyramids.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Terms	MCA2 p.285-88	Read and do A - Q	Do as class discussion or individual assignments
N	Reflections	p.288	Do Blocks 1, 2	
M	Symmetry	p.289-91	Read and do A - M	Motion Geometr approach.
M	Symmetry	p.292	Do A - S	
M	Symmetry	p.305	Do test 67	
M	Definitions and vocabulary	STM3 p. 90-94		Use this as a reference only. Difficult for students to rea on their own.
		p.94-95	Do #1 - 10	Includes the cylinder
M		p.102-5		Reference only. Includes the cone.
		p.106	Do #1 - 15 .	
E	Euler's formula	p.112		Teacher reference
E	Euler's formula	SWM3 p.36-7 p.37	Read Do 1, 2, 3, 4	
M	Cubes	p.302-3	Read and do 1,2,3	
M	Prisms	p.304	Read and do 1,2,3	
M	Pyramids	p.306-7	Read and do	
E	Patterns for the five regular polyhedra	p.318-19	Read and do	
M	Polyhedrons	EMM2 p.322-4	Read	
		p.324	Do Let's Explore	
E		p.325	Do Exercises	

ECTIVE 13: Determine a method for finding the surface area of a right prism.
14: Solve surface area problems for right prism given diagrams and word problems.

E	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Develop formula	MCA2 p.293	Read A - D	Do as a class discussion.
I	Surface area	p.295	Do B,D,F,G,H	
I		STM3 p.95-7		Use this as reference only to develop formula
I		p.98	Do # 1,3,5-10	
		p.110-11	Do Ap. Math #1, 7, 13	
I	Cylinders & Prisms	EMM3 p.326-28	Read	
		p.330	Do Ex. 8, 9. 10 , 13	
		p.332	Do "Let's Explore"	
		p.334	Do Ex. 2 - 6 9 - 11 13 , 14	

OBJECTIVE 15: Determine a method for finding surface area of a right circular cylinder.
16: Solve surface area problems for cylinders given diagrams and word problems.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Develop formula	MCA2 p.294-5	Read D - F Use display 4 & 5	Use as a class discussion
M	Surface area	p.295	Do A,E,C,I	
M		STM3 p.97		Use as reference only
		p.98 p.111	Do #2,4,11. Do Ap. Math #10	
M	Cylinders & Prisms	EMM p.326-28	Read	
		p.330	Do Ex. 1,2,3,4,5	
M	Areas of Cylinders & Prisms	p.331	"Let's Explore" 1-10	
		p.334	Exercises 1, 8	
		p.356	Exercises 35C,	

OBJECTIVE *17: Determine a method for finding surface area of a regular pyrami
*18: Solve surface area problems for regular pyramids given diagrams and word problems.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
E	Total Area	MCA2 p.296	Read Expertease	
	Cones & Pyramids	EMM3 p.336-8	Read	
	Areas of Cones & Pyramids	p.339-40	Read	
		p.340	Do "Let's Explore"	
		p.340	Do Ex. 1, 3, 5	

JECTIVE 19: Determine a method for finding volume of a right prism.

20: Solve volume problems for right prisms given diagrams and word problems.

DE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Volume of rectangular prism	CM2 p.367-8	Read #1 - 4	Do as class discussion or individual exercises.
M	Volume	p.368-9	Do #5 - 10	Assign selected questions.
M	Volume of right prism	p.369-70	Read #1 - 5	Do as class discussion or individual exercises
M	Volume	p.370-71	Do # 6, 7	
M	Develop formula	MCA2 p.297-8	Read A - C	Assign or use as discussion
M	Volume	p.299	Do Aa, Ab, B.	Assign selected problems
M	Surface area and volume	p.305	Do Aa, B, E	
I	Volume of prisms	SWM2 p.224-6 p.226 p.227	Read Do 1, 2, 3 Do 1, 2, 3	Very simple approach
M	Volume of prisms	SWM3 p.220-221 p.221	Read Do 1 - 3	
M	Cylinders & Prisms	EMM3 p.326-28 p.344-345	Read Let's Explore	
	Volumes of Cylinders and Prisms	p.346-348 p.348 *p.355 p.360	Read Exercises 1, 2, 3, 5, 8 26, 27 17	

OBJECTIVE 21: Determine a method for finding the volume of a right circular cylinder.
22: Solve volume problems for cylinders given diagrams and word problems.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Develop formula	CM2 p.373-4	Read #1 - 3	Do as class discussion or individual exercises.
M	Volume	p.374-5	Do # 4 - 10	Assign selected questions.
M	Develop formula	MCA2 p.298	Read D - F	Use as class discussion
M	Volume	p.299	Do Ac, Ad, D,E	Assign selected problems
M	Surface area and volume	p.305	Do Ac, D	
M	Volumes of cylinders and cones	SWM3 p.308-9 p.309	Read Do 1(a, b, c)	
I	Volume of cylinders	SWM2 p.230-1 p.231	Read Do 3	
	Cylinders and Prisms	EMM3 p.326-8 p.348 p.350 p.351 p.404	Read Read Do 4, *6, 7, 9 Do 1(a) Do 11	

ECTIVE 23: Determine a method for finding the volume of a right regular pyramid.
24: Solve volume problems for right regular pyramids given diagrams and word problems.

E	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
	Develop formula	CM2 p.371 - 2	Read # 1 - 5	Do as class discussion or individual exercises.
	Volume	p.373	Do #6	
	Volume of pyramids	SWM2 p.228-9	Read and do	Very simple approach.
		p.229	Do 1 - 3	
	Cones & Pyramids	EMM3 p.336-9	Read	
	Volumes of cones and pyramids	p.349-50	Do Exercises	
		p.351	Do 2, 5	

OBJECTIVE 25: Determine a method for finding volume of a right circular cone.

26: Solve volume problems for right circular cones given diagrams and word problems.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Develop formula	CM2 p.375-6	Read #1 - 3	Do as class discussion or individual exercises.
M	Volume	p.376	Do # 4	
M	Develop formula	MCA2 p.300	Read Expertease A, B	Use as class discussion
M	Volume	p.300	Do C - E	
I	Cylinders & cones	SWM2 p.230	Read and do	Do appropriate sections.
		p.231	Do 2, 4	
		SWM3 p.308	Read and do	
		p.309	Do Volume Problems 2	
		p.320	Do #5 (b)	
I	Cones & Pyramids	EMM3 p.336-7 p.338	Read Do 3, 4, 8	
	Volumes of cones and pyramids	p.349-50 p.351 p.361	Do Let's Explore Do #4, 11 Do #26 b	

ECTIVE 27: Given the formulas, solve surface and volume problems for spheres.

DE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Develop formulas	MCA2 p.301-4	Read A - H	Use as class discussion or individual assignments.
M	Surface area and volume	p.304	Do Blocks 1 - 3	Assign selected problems.
E		p.304	Do Expertease	
M	Definition	STM3 p.113-4		Reference to teacher.
M	Formulas	p.118-21		Reference to teacher.
		p.122-	Do "On Your Own" # 1 - 10	
M	Spheres	EMM3 p.342 p.342-3	Read Read Area - Volume Do Ex. 1 - 9	
	Volume of a sphere	p.350-1	Do Ex. 3, 6, 7	
		p.361	Do #27	
		p.404	Do #12	
		p.406	Do #27	

OBJECTIVE 1: Maintain previously developed skills: standard name of integral powers; use of exponents in expanded notation; power properties with integral powers and rational bases.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Review material	CM3 p. 140-143	Study Section 6-1 Do Ex. 6 - 1, #1 - 10, 13, 14, 17, 25, 26, 29	Note: Transparency masters have been included throughout this unit. They may also be used for student notes.
		p. 144-145	Study Section 6-2	
M	Practice	p. 147	Do Ex. 6 - 2 #43 - 49, #16 - 22	
M	Practice	p. 165-166	Do Review Exercise 6 #1, 2, 7, 11, 19	
M	Positive integral powers	EA p. 79-80	Read and study Do Ex. 1 - 9	
M		p. 81	Do Ex. 1 - 26	
M	Evaluating powers	p. 81-	Do Ex. 27 - 39	
		p. 87	Do Ex. 42 - 51	
		p. 117	Do Ex. 25, 28, 30, 32, 34, 35, 39	
M	Review	EMM3 p. 155	Do Review Practice #1, 2, 3	

IVE 2a: Develop the property $x^a \times x^b = x^{a+b}$ with variable bases. (Limit: Integral exponents)

ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
Development of multiplication property	CM3 p. 140-141	Read and study examples 1 and 2	
	p. 143	Do Ex. 6 - 1 #11, 15, 20, 22	
	p. 146	Do Ex. 6 - 2 #8 - 12, 20, 21, 22, 26	
Multiplication property for positive integral powers	EA p. 185-187	Read and study Do Ex. 1 - 32	

IVE 2b: Develop the property $x^a \div x^b = x^{a-b}$ with variable bases. (Limit: Integral exponents)

ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
Development of quotient property	CM3 p. 141-142	Study examples 3, 4, 5	
	p. 143	Do Ex. 6 - 1 #16, 21, 23, 24, 27, 28	
	p. 146	Do Ex. 6 - 2, #14, 15, 16	
More about positive powers	EA p. 231-232	Study examples on these pages	
	p. 233	Do 1 - 16, 19, 21, 25	

OBJECTIVE 2c: Develop the property $(x^a)^b = x^{ab}$ with variable bases.
(Limit: Integral exponents)

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
		CM3		See Prescription Sheet for Obj. 2d
I	Powers of power with positive integral exponents	EA p. 187-188	Read and study Do Ex. 1 - 33	This material also includes the property $(xy)^a = x^a y^a$.

OBJECTIVE 2d: Develop the property $(xy)^a = x^a y^a$ with variable bases.
(Limit: Integral exponents)

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Practice	CM3 p. 147	Do Ex. 6 - 2 #27 - 33	These exercises also test the property $(x^a)^b = x^{ab}$
E	Substituting for variable	p. 147	Do Ex. 6 - 2 #34 - 42	
I	Development of all power properties with integral exponents	EA p. 233-237 p. 237	Read and study Do Ex. 1 - 48	

VE 3: Apply the necessary properties of powers in the simplification of expressions.

ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
Multiplication of monomials	EMM3 p. 118-119	Study 3.2 Let's Explore Do Ex. 1 - 18 (Top p. 119)	This objective is also covered in the algebra unit
Keeping Skillful 16	EA p. 406	Do Ex. 1 - 21	

VE 4: Write any decimal numeral in scientific notation.

ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTE
Writing numerals in scientific notation	CM3 p. 148-149	Study Section 6 - 3 Do Exercise 6 - 3 #1 - 10, 17 - 27	Some exercises include computation with scientific notation which may be used as enrichment.
Review exercise	p. 165-166	Do Review exercise 6 #3, 20	
Use of scientific notation in estimating answers.	EMM3 p. 85	Study examples 1 - 3. Do exercises 1 - 18	

OBJECTIVE 5: Write any decimal numeral in standard form given scientific notation.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Using scientific notation	SWM3 p. 196	Do 'For You to Study' and Ex. 1, 2, 3	
I	Practice	p. 197	Do 'On Your Own' Ex. 1, 3	
M	Review	p. 198	Do Chapter Review #8	

OBJECTIVE *6: Perform multiplication and division with numerals written in scientific notation.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Scientific notation	CM3 p. 150 p. 166	Do 31 - 36 Do 21 - 26	
I	Scientific notation review	EMM3 p. 462 p. 360 p. 258 p. 199	Do 15 a - c Do 23 Do 21 Do 24	Some of these items may be difficult

OBJECTIVE *7: Solve problems using scientific notation.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
III	Scientific	CM3 p. 149 p. 150	Ex. 6 - 3 Do 25 - 28 Do 37 - 40	Enrichment items.

OBJECTIVE 1: Identify constants, variables, terms, and factors in an expression.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Variables	CM3 p.1-3	Read	Texts do not develop the objective adequately
	Terms	p.173	Study	
	Constant terms	p.174	Study	
I	Classifying expressions, constants, variables	EA p.169 p.170	Read	Discuss only the vocabulary. Exercises not suitable
M	Definition of term	EMM2 p.318 p.319	Do #1 - 5 Read	

OBJECTIVE 2: Identify the polynomials as to monomial, binomial, and trinomial.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Meaning of monomials, binomials, trinomials	CM3 p.173-175 p.177	Read Study	It may be simpler to initially define a monomial as being equivalent to a term. The distinction may be made later. Note the different approaches in different texts.
M		p.180	Do Exercises #3,A-I	
I	Polynomials as monomials, binomials	EA.Sec.34 pp.173-175 p.174 p.175 p.177	 Read Note the definitions Do #1 - 5 Do #11 - 13 Do #7 - 12	Objectives 2, 3,4,5 are covered in Section 34

OBJECTIVE 2: Continued

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTE
E	Definition of polynomials	EMM2 p. 323	Read	
M	Definition of monomial, binomial, and trinomial	p. 324	Read	
		p. 324	Do Ex. 1, 2, 3	

OBJECTIVE 3: State the degree of a polynomial in one variable and write th polynomial in standard form. (Limit - one variable)

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTE
I	Standard form	CM3 p. 176	Study #5	
	Degree of polynomial	p. 176-177	Study definition and Example 1	
M		p. 176	Do Ex. #5 a - h	
		p. 179	Do Ex. #1 a - 1	
I	Degree of polynomial	EA p. 174	Read	
		p. 175	Do #8 - 10	
		p. 176	Do #14, 15, #1 - 6	
I	Descending and ascending order	EMM2 p. 322	Read	
		p. 323	Do Ex. #1	
I	Degree of a term	p. 323-324	Read	Ties in wit Obj. #2 - 4
		p. 325	Do Ex. #4 - 7	One variabl
E	Degree of a term and degree of a	EMM3 p. 111-112	Read	More than o variable
		p. 112	Do #1 - 2	

OBJECTIVE 4: Evaluate polynomials by substituting for the variable.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Mathematical forms	CM3 p. 167	Study	
	Values of mathematical forms	p. 168	Do Ex. 7 - 1, #1 - 14	
		p. 170	Example 4 Do Ex. 7 - 2, #1 - 10	

OBJECTIVE 5: Identify "like" and "unlike" terms (similar terms).

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Like terms	CM3 p. 178	Study definition, and Examples 3, 4	
M		p. 180	Do Exercise #4, 5	
I	Like (similar) terms (defined)	EA Sec. 34 p. 176	Read the definitions	
M	Definition similar terms	EMM2 p. 319-320	Do 'Let's Explore' #1, 2	One variable
M	Definition similar terms	EMM3 p. 113	Read, and Do 'Let's Explore'	More than one variable (A good exercise)

OBJECTIVE 6: Find the sum and difference of monomials

CODE	ITEM	RESOURCE		DIRECTION TO STUDENTS	TEACHER NOTES
I	Sum and difference of monomials	CM3	p. 180-183	Study	
M			p. 183-185	Do #1 - 35 #36 - 57	(Addition) (Subtraction)
M	Sum and difference of monomials	EA	p. 176 p. 177	Study the examples Do #13 - 42	
M	Sum of 'similar terms'	EMM2	p. 320	Do #1 - 20	Good points (p. 312)
			p. 321	Read notes and examples	
			p. 322	Do Ex. 1 - 16	
	Sum, then standard form		p. 323	Do Ex. 2	
M	Sum, then standard form	EMM3	p. 114	Do Ex. 1 - 14	Terms contai more than on variable

BJECTIVE 7: Find the sum of polynomials. (Limit: trinomials)

CODE	ITEM	RESOURCE		DIRECTION TO STUDENTS	TEACHER NOTES
I	Sum of polynomials	CM3	p. 185-186	Study theory and Examples 1 - 4	
M			p. 187	Do Ex. #1 - 8	
			p. 188	Do Ex. #21 - 38	
			p. 189	Do Ex. #50 - 52	
M	Sum of polynomials	EA	Sec. 36 p. 180-181	Read	
			p. 181-182	Do #1 - 26	
I	Definition of sum	EMM2	p. 325-327	Read	All one variable
			p. 326	Do 'Let's Explore'	
M	Horizontal sums		p. 326	Do Ex. #1 - 10	
			p. 328	Do Ex. #1 - 5	Raised negative sign used
E	Properties of addition		p. 328	Do 'Let's Explore'	Additive inverse of a polynomial
			p. 329-330	Read and Do 'Let's Explore'	
M	Add in columns		p. 333	Read	Good reference. Example given
			p. 333-334	Do Ex. #1 - 15	Up to 4 terms
M	Add: columns and horizontally	EMM3	p. 115-116	Read Do #1 - 10	More than one variable
			***	In general, EMM2 deals with terms in one variable, and EMM3 with terms in more than one variable.	

OBJECTIVE 8: Find the difference of polynomials. (Limit: trinomials)

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Difference of polynomials	CM3 p. 186-187	Study rule and Example #6	Note the use of the additive inverse
M		p. 188	Do Ex. #9 - 20 #39 - 49	
M	Subtracting polynomials	EA Sec. 37 p. 182-183 p. 183-184	Read Do Ex. #1 - 28	
	Review of the sums and difference of polynomials	p. 184-185	Do Ex. #1 - 40	
I	Additive inverses	EMM2 p. 329-330	Do 'Let's Explore'	Introduction to subtractio (one variable
M	Defintion of additive inverse	p. 330 p. 330-331	Read Do Ex. #1 - 2	Finding additive inverse
M	Definition of subtraction	p. 331	Go over example Do Ex. #1 - 10	
E	Subtraction done 'mentally'	p. 331-332	Read	
M	Subtraction	p. 332-333	Do Ex. #1 - 18	
E	Subtraction in columns	p. 334 p. 335	Read Do Ex. #1 - 15	Example given Up to 4 terms
M	Subtraction in columns and horizontally	EMM3 p. 116-117 p. 117-118	Read Do Ex. #1 - 10	More than one variable

OBJECTIVE 9: Find the product of monomials.

CODE	ITEM	RESOURCE		DIRECTION TO STUDENTS	TEACHER NOTES
I	Product of monomials	CM3	p. 189-190	Study rule and Example 1	
M			p. 191	Do Ex. #1 - 22	
E			p. 191	Read Example 3	
			p. 191-192	Do #23 - 30	
			p. 192	Do Ex. #40, 41	
I	Multiplication of of monomials in one variable	EMM2	p. 336	Read notes Do 'Let's Explore'	One variable
M	Product of monomials defined		p. 337	Do Ex. #1 - 18	
E	Product of monomials	EA	Sec. 38		Review Unit 5 (Powers)
			p. 185-186	Read	
			p. 186	Do #1 - 32	
			p. 187-188	Read	
			p. 188	Do #1 - 25	
			p. 190	1, 2, 5, 7, 8, 10,11	
			p. 197	#1 - 6	
I	Multiplication of monomials in more than one variable	EMM3	p. 118	Do 'Let's Explore'	
M			p. 119	Do Ex. #1 - 18	

OBJECTIVE 10: Find the quotient of monomials.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Quotient of monomials	CM3 p. 190	Study rule and Example 2	
M		p. 191-192	Do Ex. #31 - 39	
		p. 203	Do Ex. #1	
		p. 192	Do Ex. #42, 43	
	Review of Quotients of Powers	EA Sec. 49		
		p. 231-232	Read	
		p. 232	Do #1 - 40	
		Sec. 50		
		p. 233-236	Read	
		p. 236-237	Do #28 - 48	
M	Quotient of monomials	Sec. 51		
		p. 237-238	Read to end of Example 3	Good source for exercises
		p. 240	Do #1 - 17	

OBJECTIVE 11: Find the product of a monomial and a polynomial.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Product of monomials and polynomials	CM3 p. 192-193	Study theory and Examples 1, 2, 3	
M		p. 195	Do Ex. #9 - 24	
I	Product of a monomial and a polynomial	EA Sec. 40		
		p. 189	Read and study Examples 4, 5, 6	
		p. 191	Do Ex. #1 - 31	
		p. 197	Do Ex. #7 - 10	
I	Multiplication of monomials and polynomials	EMM2 p. 337-338	Do 'Let's Explore' #1	Minimal development

JECTIVE 12: Factor polynomials by using the G.C.F.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Factor polynomials by using G.C.F.	CM3 p. 193-4 194	Study from Example 3 to the exercises on p. 194	
M		p. 194	Do Ex. #1 - 8	
		p. 195	Do Ex. #25 - 38	
M	Factoring poly nomials: G.C.F method	EA Sec. 43		
		p. 205-206	Read	Good development and exercises
		p. 207	Do #1 - 30	
		p. 209	Do #1 - 20	
E		p. 209-210	Do #21 - 34	
I	Factoring monomials	EMM2 p. 349-350	Do 'Let's Explore' Do #1 - 10	Possible ways to factor monomials
I	Common factors	p. 351	Do 'Let's Explore'	Factoring treated with multiplication
M	Common factors	p. 351-2	Go over examples Do #1 - 20	
M	CF: More than one variable	EMM3 p. 123	Read	
		p. 124	Do #1 - 12	

OBJECTIVE 13: Find the product of two binomials of the form (x + a)(y + b).

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Product of two binomials (x+a)(y+b) form	EA Sec. 41 p. 192-193 p. 195	Read to end of Example 4 Do #1 - 10	Good develop-ment
I	Multiplication of polynomials	EMM2 p. 337-339	Do 'Let's Explore' #1, 2, 3, 5	Detailed development Horizontal method
M	Definition of multiplication	p. 339	Read	
E	Properties of multiplication	p. 341-342	Read Do 'Let's Explore"	Communicative associative, identity-element properties
M	Product of binomials	p. 342-343 p. 343	Do 'Let's Explore' Do #5, 6, 7, 10, 11	The multiplic tion pattern is illustrate (Most of the exercises produce tri-nomials.)

OBJECTIVE 14: *To find the product of two polynomials of more than two term

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Product of two polynomials of more than two terms	CM3 p. 197-198 p. 199	Read Examples 4 to 6 Do Ex. #21 - 24	
M	Product of two polynomials of more than two terms	EA Sec. 41 p. 192-193 p. 193 p. 195	Read Examples 2 & 5 Do Questions 4 & 8 Do #12 and 13	
	Definition of multiplication	EMM2 p. 339 p. 340	Read Do Exercise 1	
E		EMM3 p. 122	Do Ex. #31 - 36	

OBJECTIVE 15: Factor polynomials by grouping into pairs.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	CF which is a binomial	EMM3 p. 124	Read	
		p. 125	Do #1 - 8	

OBJECTIVE 16: Find the products of two binomials of the form (x + a)(x + b).

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Product (x + a)(x + b)	CM3 p. 195-197	Study Examples 1 - 4	"FOIL" introduced
		p. 198	Do Ex. #1 - 8	
		p. 231-232	Study	General product
M		p. 232-233	Do Ex. #1 - 20	
		p. 233	Do Ex. #21 - 52	Mainly harder questions
M	Product of two binomials (x + a)(x + b)	EA Sec. 41 p. 193-194	Read. Note Examples 7, 8, 9	The discussion is a continuation of Obj. #13
		p. 195	Do #15 - 24	
I	Product of two binomials	EMM2 p. 342-343	Do 'Let's Explore'	Combine similar terms. Pattern is illustrated.
M	Product of two binomials	p. 344	Read	
M	Product of two binomials	p. 344-	Do #1 - 20	

OBJECTIVE 17: To factor trinomials in which the coefficient of the squared variable is one.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Factor $(x^2 + (a+b)x + ab$	CM3 p. 233-235	Read and study Examples 1 - 6	Check note at bottom of p. 235
M		p. 236	Do Ex. #1 - 44	
M	Factoring trinomials	EA Sec. 46 p. 218	Do #1 - 17	The factoring of $ax^2 + bx +$ is not discussed as a special case
I	Factoring and products compared	EMM2 p. 352-353	Do 'Let's Explore'	Good introduction
M		p. 353-354	Go over examples	Pattern shown
M	Factoring	p. 354	Do #1 - 30	Good source
E	Factoring-first terms like x^6y^6	EMM3 p. 130	Read	
		p. 131	Do #1 - 20	

OBJECTIVE 18: Write the products of $(a + b)^2$, and $(a - b)^2$, and $(a + b)(a - b)$ and recognize them as general cases.

CODE	ITEM	RESOURCE		DIRECTION TO STUDENTS	TEACHER NOTES
M	Products	CM3	p. 217-19	Read	
M			p. 219	Do Ex. #1 - 16	
E	Product		p. 219-20	Do Ex..#17 - 42	
			p. 224-25	Read	
M	$(a + b)^2$ and $(a - b)^2$		p. 225	Do Ex. #1 - 20	
E			p. 225	Do Ex. #21 - 30	
M			p. 225	Do Ex. #31 - 40	Review of Objectives 7,8,18
M	Products of $(a + b)^2$ $(a - b)^2$ $(a + b)(a - b)$	EA	Sec. 45 p. 210-11	Read the appropriate parts	Objectives 18 (Products) and 19 (Factors) are discussed together in Section 45
			p. 214	Do Ex. #1 - 13 #43 - 52	
			p. 196	#41 - 49, #50 - 58	The special products are first noted in #49 and #58
I	Difference of Squares	EMM2	p. 345	Do 'Let's Explore'	Pattern is shown
M	Difference of Squares		p. 346	Do #1 - 15	
M	$(a + b)^2(a - b)^2$		p. 346-47	Do 'Let's Explore"	Pattern is shown
			p. 347	Do #1 - 11	
M	Various types of products		p. 348	Do #1 - 30	
M	$(a + b)^2$	EMM3	p. 121	Read #2	Pattern shown for 2 variables
M	$(a + b)(a - b)$		p. 121	Read #3	

OBJECTIVE 19: Factor $a^2 + 2ab + b^2$, $a^2 - 2ab + b^2$, and $a^2 - b^2$ and recognize them as general cases.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Factoring special products Difference of squares $a^2 - b^2$	CM3 p. 220-222	Read Examples 1 to 5	
M	$a^2 - b^2$	p. 222	Do Ex. #1 - 8	
		p. 222-223	#9 - 24 #41 - 45	More complex questions
	Perfect Squares: $a^2 + 2ab + b^2$ $a^2 - 2ab + b^2$	p. 226-228	Read	
I		p. 228	Do Ex. #1 - 22	
M		p. 229	#23 - 30	
E		p. 229	#31 - 39	Square roots of perfect squares
M	Factor: $a^2 + 2ab + b^2$ $a^2 - 2ab + b^2$ $a^2 - b^2$	EA Sec. 45 p. 210-213	Read the appropriate parts	Objectives 18 and 19 are discussed together in Section 45
		p. 214	Do Exercises #17 - 21 #23 - 36 #37 - 42 #53 - 62	
I	Difference of Squares Factor $a^2 - b^2$	EMM2 p. 357-358	Do 'Let's Explore' Read	Pattern is shown
M		p. 359	Do Ex. #1 - 20	
M	Various types	p. 359-360	Do Ex. #1 - 40	Good review exercise

OBJECTIVE 19: Continued

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
E	Solving equations by factoring	p. 360 p. 361	Read Do Ex. #1 - 12	An application for factoring for better students
M	Factor $a^2 - b^2$ (Two variables)	EMM3 p. 125-6 p. 126	Read Do Ex. #1 - 18	
M	Factor perfect squares (Two variables)	p. 127-128 p. 129	Read Do Ex. #1 - 12	
E	Various types	p. 129 p. 130	Read Do Ex. #1 - 10	Harder questions

OBJECTIVE 20: Find the product of two binomials of the form (ax + b)(cx + d).

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Product of (ax + b)(cx + d)	CM3 p. 237	Read	Good development
M		p. 238	Do Ex. #1 - 10 #13 - 39	
M	Product of two binomials: (ax + b)(cx + d)	EA Sec. 41 p. 193-194	Notice Ex. #9	Not discussed separately
		p. 195	Do Ex. #25 - 40	Taken as part of Obj. #13
		p. 197	Do Ex. #1 - 40	Review Objectives 9, 11, 13, 14, 16, 18, 20
M	Product of (ax + b)(cx + d)	EMM3 p. 120	Read Ex. #1 and 2	
E	Various types of products	p. 122	Do Ex. #1 - 20	More difficult type of questions

OBJECTIVE 21: *Factor trinomials in which the coefficient of the squared variable is greater than one.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Factor $px^2 + qx + r$	CM3 p. 239-241	Read	Good development
M		p. 242-243	Do Ex. #1 - 45	Good progression of exercises
M	Factoring trinomials	EA Sec. 46 p. 215-218	Read	
		p. 218	Do Ex. #21 - 60	
M	Review of factoring	p. 251	Do Ex. #18 - 14	Reviews Objectives 12, 17, 19, 21
I	Multiplication compared with factoring	EMM2 p. 354-355	Do 'Let's Explore'	Pattern is shown
M	Factoring	p. 355-356	Read, go over examples	
M	Factoring	p. 357	Do Ex. #1 - 30	
M	Factoring	EMM3 p. 131-133	Do 'Let's Explore' Read	
M	Factoring	p. 134	Do Ex. #1 - 40	
E	Factoring (more than one variable)	p. 136-137	Do 'Let's Explore' Read	
E		p. 138	Do Ex. #1 - 30	

OBJECTIVE 22: *Use long division to divide polynomials.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Long division of polynomials	CM3 p. 207-210	Read and study examples	Good development
M		p. 201	Do Ex. #1 - 6 #7 - 23	
	Division of polynomials (long division)	EA Sec. 51 p. 237-241	Read	
		p. 241	Do Ex. #24 - 61	
M	Division	EMM3 p. 182-184	Read	
		p. 184	Do Ex. #1 - 28	

OBJECTIVE 23: Define algebraic fractions as expressions of the form $\frac{a}{b}$ where a and b are polynomials, $b \neq 0$.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Definition of algebraic fractions	CM3 p. 243-4	Read	
I	Definition of fractional expressions	EMM3 p. 261-262	Read	
E	Equivalent fractions	p. 267	Read	
		p. 268	Do Ex. #1 - 10	

OBJECTIVE 24: Simplify algebraic fractions by factoring and reducing.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Simplify algebraic fractions (Factoring and reducing)	CM3 p. 244 245	Read	
M		p. 246	Do Ex. #1 - 8, #21 - 35	
E		p. 246	Do Ex. #36 - 39	
M	Reducing rational expressions	EA Sec. 53 p. 248-250	Read	
		p. 250	Do Ex. #1 - 33	
M	Factoring and reducing	EMM3 p. 271-272	Read	
		p. 272	Do Ex. #1 - 19	

OBJECTIVE 25: *Find the non-meaningful replacements of an algebraic fractic

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Meaningful and non-meaningful replacements	CM3 p. 262 264	Read	
		p. 265	Do Ex. #6 - 26	
M	Non-meaningful replacement of variable in algebraic fraction	EA Sec. 52 p. 243-247	Read and answer the questions in the section	No special exercises provided
I	Replacements in fractional phrases	EMM3 p. 262	Read	
M	Non-sensible replacements	p. 263	Do 'Let's Explore'	
M	Find replacements	p. 264	Do Ex. #1 - 14	

OBJECTIVE 26: *Perform the operations of multiplication and division with algebraic fractions.

CODE	ITEM	RESOURCE		DIRECTION TO STUDENTS	TEACHER NOTES
M	Multiplication and division of algebraic fractions	CM3	p. 247-248	Read	
M			p. 248-249	Do Ex. #1 - 27	
D			p. 249	Do Ex. #28 - 33	
M	Mutliplying and dividing rational expressions	EA	Sec. 55 p. 259-261	Read	
			p. 261-262	Do Ex. #1 - 50	
M	Product of fractions	EMM3	p. 269-270	Read Do 'Let's Explore'	
			p. 270-271	Do Ex. #1 - 14	
E	Products, Reducing: non-meaningful replacements		p. 273-274	Do Ex. #1 - 20	Good review of Obj. #24, 25
M	Division of fractions		p. 274-275	Read	
			p. 276-277	Do Ex. #1 - 25	

OBJECTIVE 27: *Perform the operations of addition and subtraction with alge
fractions which have common denominators.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Addition and subtraction of algebraic fractions (common denominators)	CM3 p. 250	Read	
M		p. 252	Do Ex. #1 - 8	
M	Adding and subtracting rational expressions (common denominator)	EA Sec. 56 p. 262-263	Read to end of Example 13	
		p. 264	Do Examples #1 - 6	
		p. 265	#31 - 36 #38 - 39 #41 - 43	
M	Addition of algebraic	EMM3 p. 277-278	Do 'Let's Explore' Read	
M		p. 279	Do Ex. #1 - 10	

OBJECTIVE 28: *Perform the operations of addition and subtraction with algebraic fractions which have different denominators.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Addition and subtraction of algebraic fractions (different denominators)	CM3 p. 250-252	Read	
		p. 252-253	Do Ex. #9 - 29	
M	Adding and subtracting rational expressions. (Different denominators)	EA Sec. 56 p. 263-264	Read from Example 3 on	
		p. 264-265	Do Ex. #8 - 30 #37, 40 #44 - 60	
		Sec. 57 p. 267-268	Read	Choose suitable exercises
		p. 269	Do Exercises #1 - 32	
I	LCM of poly nomials	EMM3 p. 283	Read	
		p. 284	Do Ex. #1 - 20	Finging LCM
E	Addition	p. 285	Read	
		p. 286	Do Exercises #1 - 30	Review Obj.#25
M	Subtraction	p. 287-288	Read	
		288-289	Do Ex. #1 -15	
M	Denominators of a - b, b - a	EMM3 P. 279-280	Do 'Let's Explore' Read	
		p. 280	Do Ex. #1 - 9	
M	Adding fractions of different denominators	p. 281	Read	Good development
M	Fractional phrases	p. 281-282	Do 'Let's Explore Read	
M	Addition	p. 282	Do Ex. #1 - 10	

OBJECTIVE 1: Identify quadrants, axes, and origin on the coordinate plane

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Information	CM 3 p.396-7	Read 12 - 2	
		p.401-2	Read 12 - 4	
I	Information	MCA 2 p.195-6	Read	
I	Graphing points in a plane	SWM 3 p.152	Do "For You to Investigate"	
			Do #1, 2, 3	
I	Graphs on a plane	EMM 2 p.45	Read	
		p.49-50	Read	
		p.200	Read	

OBJECTIVE 2: Plot ordered pairs on the co-ordinate plane.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
		CM 3 p.401-3	Do Ex. 12-3, #1, 2, 3, 4	
		p.405	Ex. 12-4, #1 - 8	
M	Practice	p.423-4	Do #5, 6, 7	
I	Information	MCA p.196-8	Read	
M	Deriving ordered pairs from graphs	p.199	Do Block 1A for graphs #1, 2, 3, 4, 5	
M	Plotting ordered pairs	SWM 3 p.153	Do #1, 2, 3, 4, 5 Do Project Card 34	
		p.154	Do: "For You to Investigate" Do #1, 2, 3	
		p.155	Do #1,2,3,4	
			Do Project card 35	
		p.156	Do:"For You to Investigate"	
		p.157	Do: "On Your Own" #1, 2, 3	
	Exploring translations	p.164	Do:"For You to Investigate" Do #1, 2	
		p.165	Do "On Your Own" #1, 2, 3, 4	
	Exploring enlargements	p.170	Do "For You to Investigate"	
		p.171	Do "On Your Own" #1 ,2	
E		p.171	Do Project Card 42	
M	Practice	p.174	Do # 1, 2, 3	
I	Graphs on a plane	EMM 2 p.46	"Let's Explore" do 1 - 10	
		p.48	"Let's Explore" do 4 - 9	
		p.50	Exercises, do 1 - 5	
		p.205	Exercises, do 3 - 9	

OBJECTIVE 3: Graph relations and identify locus, intercepts, and constants ($y = kx$), $y = kx^2$, $y = \frac{k}{x}$)

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Rate Graphs	CM 3 p. 406 - 7 p.407-8	Read 12-6 Do Ex. 12-5, #1,2,3,4,5,6,7	
M	Direct and inverse variation	MCA 2 p.215-18	Read	Exercises and development u the concepts function, dom and range. Discuss graph
	Practice	p.218-19	Do Ex. in Block 1, 2, & 3	
	Direct Variation	p.220-22	Read	
	Identifying $y = kx$, $y = kx^2$, $y = \frac{k}{x}$ graphs	p.222-23	Do Block 1, 2, &3	
	Review Exercise	p.227	Do tests 60 & 61	
	Review Exercise	p.306	Keeping Skillful Block 1	
M	Direct Variation	EA p.331-33	Read Section 69	
		p.333-34	Do Ex. 1-6, 10 - 13, 20 - 28	
		p.335-37	Read Section 70	
		p.338-39	Do Ex. 1 - 10,14-26	
	Inverse Variation	p.339-41	Read Section 71	
		p.341-42	Do Ex. 1-6, 10-19	
E	Graphing Linear Equations	p.355-57	Read Section 74	
		p.357	Do Ex. 1 - 23	
I	Graphs	EMM 3 p.91-92	Do "Let's Explore" Do Ex. 1 - 3	
I	Graphs on a plane	p.231-32	Read. Do Ex. 1, 2	
		p.237-38	Do "Let's Explore"	
		p.239	Do Ex. 1 - 6	
E		p.233-35	Read	
		p.235	Do Ex. 1 - 6	
		p.236	Do Ex. 1 - 6	
		p.241	Do "Let's Explore"	

OBJECTIVE 1: Demonstrate the need for the real numbers. (eg. Square root of non-perfect squares.) (eg. Solve $x^2 = 2$).

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Irrational Numbers	CM3 p.88-91	Study "To prove that 2 is not a rational number".	
		p.91	Do Ex. 4-1, #5 - 12	
I	The System of Real Numbers	EMM3 p.201-202	Study introduction Do "Let's Explore" Exercises	
M	Need for real numbers	p.207-208	Do "Let's Explore" Exercises	
		p.209-211	Study	

OBJECTIVE 2: Define irrational numbers as infinite non-repeating decimals that cannot be expressed in the form $\frac{a}{b}$ with $b \neq 0$.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
M	Definition	CM3 p.88	Study # 4 - 1	
		p.91	Do Ex. 4-1, #4	
I	Non-repeating decimals	EA p.392-395	Study Sec. 82	
		p.395	Do Ex. 1 - 9	
I	Real Numbers	EMM3 p.211-213	Study -Real Numbers -Names for irrational numbers	

OBJECTIVE 3: Define real numbers as all infinite decimals and/or as the union of rationals and irrationals.

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NOTES
I	Definition	CM3 p.92	Study #4 - 2 1st paragraph	Contains absolute value
I	Locating real numbers	Ea p.26-	Study Sec. 80	
I	Definition	EMM3 p.211-212	Study "Real Numbers"	Also entered for Obj. #2

DATE DUE SLIP

OBJECTIVE 4: Demonstrate the relationship between the real numbers and other numbers and other number systems. (Wholes, integers, rationals

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NO
I	Diagram	CM3 p.92	Study diagram in Sec. 4 - 2	Also enter for Object #3
M	Exercises	p.95	Do Ex. 4 - 2, #1 - 5	

OBJECTIVE 5: *Plot rational and irrational numbers on a number line

CODE	ITEM	RESOURCE	DIRECTION TO STUDENTS	TEACHER NO
I	Location of $\sqrt{2}$ and π	CM3 p.89-91	Study #4 - 1. "To show that $\sqrt{2}$ is represented by a unique point on the number line"	
M	Graph solution sets	p.95	Do Ex. 4 - 1, #6 - 9, Do Ex. 2, #6 - 23	
I	Location of intervals	EA p.393-394	Study diagrams	
I,M	$\sqrt{2}$, $\sqrt{3}$, $\sqrt{5}$ and π.	EMM3 p.209-211	Study - Gaps in the number line, - No rational number π Do "Let's Explore"	
		p.211	Do Ex. 1 - 5	

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DUE EDUC NOV 27'80
NOV 20 RETURN
DUE EDUC FEB 2 '81
FEB 2 RETURN
DUE EDUC APR 19'84
APR 13 RETURN
DUE EDUC SEP 17'84
SEP 16 RETURN
DUE EDUC MAR 12 '85
MAR 07 RETURN
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DUE EDUC OCT 01'85 140
SEP 26 RETURN
DUE EDUC DEC 3 '85
DUE EDUC JAN 07 '86
JAN 08 RETURN

DUE EDUC JAN 28 '86
JAN 22 RETURN
DUE EDUC FEB 02 '86
FEB 03 RETURN
DUE EDUC NOV 05 '87
NOV 04 RETURN
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